Scotts Lawn Tractors
S1642, S1742, and S2046

OMGX10784 G0

OPERATOR'S MANUAL

Scotts®

Manufactured by John Deere

JOHN DEERE

North American Version
Litho in U.S.A.

INTRODUCTION

Thank You for Purchasing a Scotts Product

We appreciate having you as a customer and wish you many years of safe and satisfied use of your machine.

Using Your Operator's Manual

This manual is an important part of your machine and should remain with the machine when you sell it.

Reading your operator's manual will help you and others avoid personal injury or damage to the machine. Information given in this manual will provide the operator with the safest and most effective use of the machine. Knowing how to operate this machine safely and correctly will allow you to train others who may operate this machine.

Product warranty is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The product warranty is explained on the warranty certification you received from your dealer.

Sections in your operator's manual are placed in a specific order to help you understand all the safety messages and learn the controls so you can operate this machine safely. You can also use this manual to answer any specific operating or servicing questions. A convenient index located at the end of this book will help you to find needed information quickly.

The machine shown in this manual may differ slightly from your machine, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the machine will travel when going forward. When you see a broken line arrow (------>), the item referred to is hidden from view.

Special Messages

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

CAUTION: Avoid injury! This symbol and text highlight potential hazards or death to the operator or bystanders that may occur if the hazards or procedures are ignored.

IMPORTANT: Avoid damage! This text is used to tell the operator of actions or conditions that might result in damage to the machine.

NOTE: General information is given throughout the manual that may help the operator in the operation or service of the machine.

CALIFORNIA Proposition 65 Warning

Warning: The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

PRODUCT IDENTIFICATION

Record Identification Numbers

Scott's Lawn Tractors

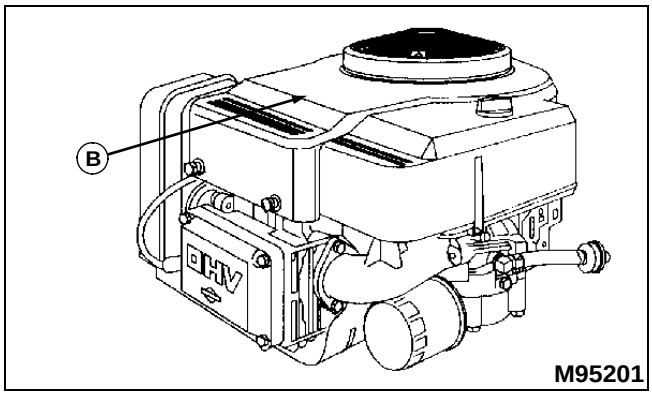
S1642, S1742 and S2046 PIN (020001 -)

If you need to contact an Authorized Service Center for information on servicing, always provide the product model and identification numbers.

You will need to locate the identification numbers for the product. Record the information in the spaces provided below.

PRODUCT IDENTIFICATION NUMBER (A):

_ _



Picture Note: 17hp engine shown.

ENGINE SERIAL NUMBER (B):

_ _

DATE OF PURCHASE:

_____

DEALER NAME:

_____

DEALER PHONE:

_____

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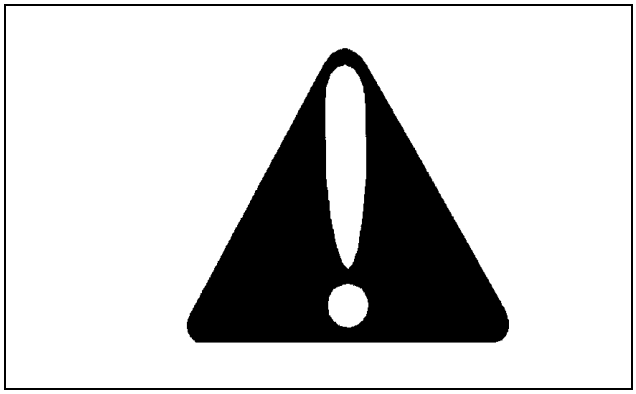
OMGX10784 G0 - English

Understanding The Machine Safety Labels

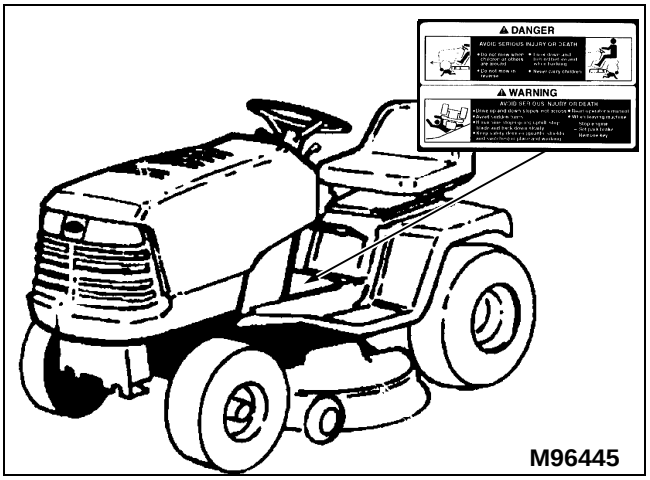


The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine safety labels, the words DANGER, WARNING, and CAUTION are used with this safety-alert symbol, (⚠). DANGER identifies the most serious hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, CAUTION, and the safety-alert symbol, (⚠).

DANGER-WARNING: AVOID SERIOUS INJURY OR DEATH



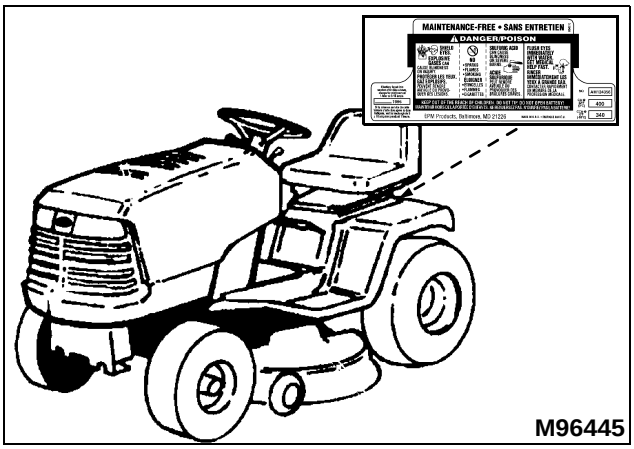
- Do not mow when children or others are around.
- Do not mow in reverse.
- Look down and behind before and while backing.
- Never carry children even with blades off.
- Drive up and down slopes, not across.
- Avoid sudden turns.
- If machine stops going uphill, stop blade and back down slowly.
- Keep safety devices (guards, shields, and switches) in place and working.
- Read operator's manual.
- When leaving machine:

–Stop engine

–Set park brake

–Remove key

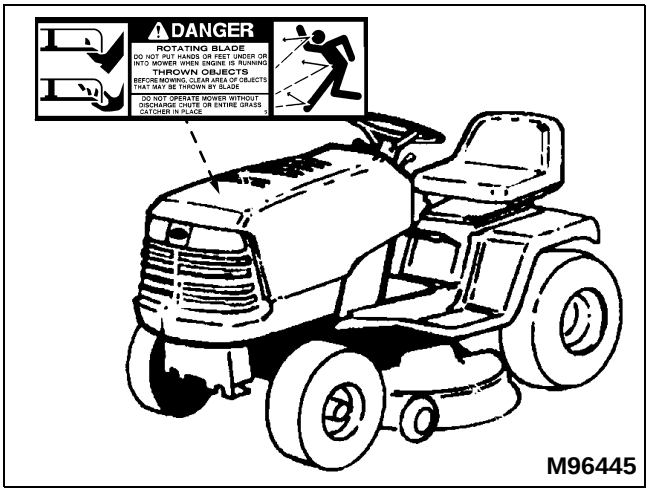
DANGER: POISON



Picture Note: Located on battery, under seat.

- Shield eyes. Explosive gases can cause blindness or injury.
- No sparks, flames, smoking.
- Sulfuric acid can cause blindness or severe burns.
- Flush eyes immediately with water.
- Get medical help fast.
- Keep out of the reach of children.
- Do not tip.
- Do not open battery!

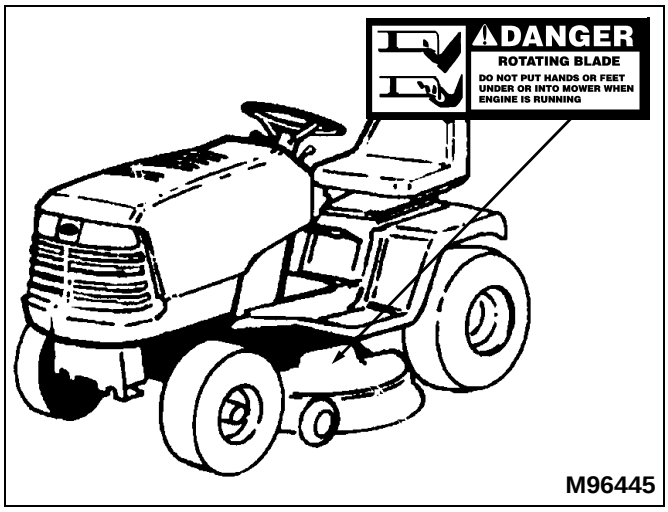
DANGER: ROTATING BLADE-THROWN OBJECTS


DANGER
ROTATING BLADE
DO NOT PUT HANDS OR FEET UNDER OR INTO MOWER WHEN ENGINE IS RUNNING
THROWN OBJECTS
BEFORE MOWING, CLEAR AREA OF OBJECTS THAT MAY BE THROWN BY BLADE
DO NOT OPERATE MOWER WITHOUT DISCHARGE CHUTE OR ENTIRE GRASS CATCHER IN PLACE
M96445

Picture Note: Located on Right-Hand side of deck

- Rotating blades.
- Do not put hands or feet under or into mower when engine is running.
- Thrown objects.
- Before mowing, clear area of objects that may be thrown by blade.
- Do not operate mower without discharge chute or entire grass catcher in place.

DANGER: ROTATING BLADE



Picture Note: Located on Left-Hand side of deck

- Do not put hands or feet under or into mower when engine is running.

Emission Control System Certification Label

NOTE: Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by EPA and/or CARB authorized service centers. Contact your John Deere Commercial and Consumer Equipment Retailer concerning emission controls and component questions.

The presence of an emissions label signifies that the engine has been certified with the United States Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB).

The emissions warranty applies only to those engines marketed by John Deere that have been certified by the EPA and/or CARB; and used in the United States and Canada in off-road mobile equipment.

Emission Compliance Period

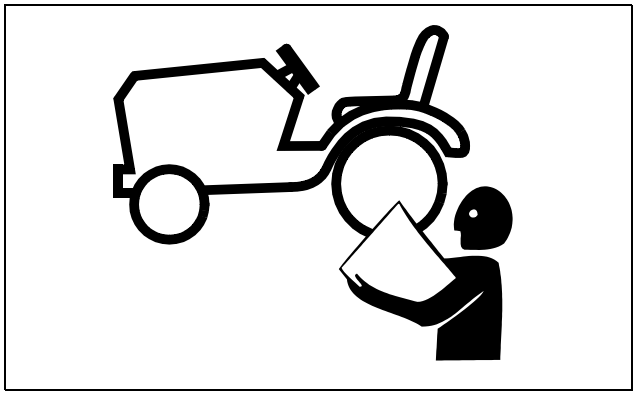
If your engine has the emission compliance category listed on the emission control system certification or air index label, this indicates the number of operating hours for which the engine has been certified to meet EPA and/or CARB emission requirements. The following table provides the engine compliance period in hours associated with the category found on the certification label.

Agency	Category	Hours
EPA	C	250
EPA	B	500
EPA	A	1000
CARB	Moderate	125
CARB	Intermediate	250
CARB	Extended	500

Certification

Your mower has been certified by an independent laboratory for compliance with American National Standard B-71.1, “Safety Specifications” for Power Lawn Mowers, Lawn and Garden Tractors, and Lawn Tractors.

Operating Safely



- Read, understand and follow all instructions in the manual and on the machine before starting.
- Only allow responsible adults, who are familiar with the instructions to operate the machine.
- Inspect machine before you operate. Be sure hardware is tight. Repair or replace damaged, badly worn, or missing parts. Be sure guards and shields are in good condition and fastened in place. Make any necessary adjustments before you operate.
- Check brake action before you operate. Adjust or service brakes as necessary.
- Stop machine if anyone enters the area.
- If you hit an object, stop the machine and inspect it. Make repairs before you operate. Keep machine and attachments properly maintained and in good working order.
- Be aware of the mower discharge direction and make sure that no one is in the path of the discharge direction.
- Do not leave machine unattended when it is running.
- Only operate during daylight or with good artificial light.
- Be careful of traffic when operating near or crossing roadways.
- Do not wear radio or music headphones while operating the machine. Safe operation requires your full attention.
- Older adults are involved in a large percentage of riding mower accidents involving injury. These operators should evaluate their ability to operate a mower safely enough to protect the operator and others from serious injury.

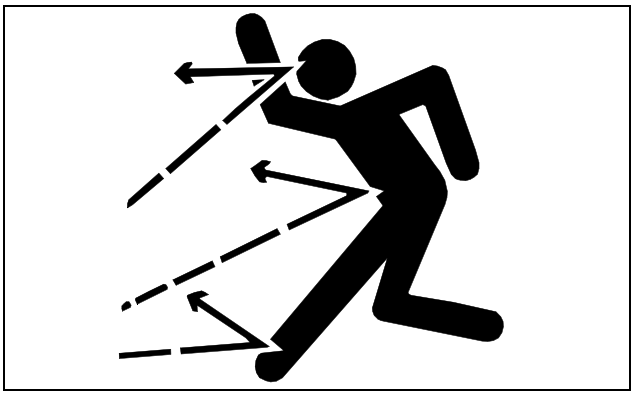
Operate Mower Safely

- In addition to reading your Operator's Manual, view your Mowing Safety Video.

Parking Safely

1. Stop machine on a level surface, not on a slope.
2. Disengage mower blades.
3. Lower attachments to the ground.
4. Lock the park brake.
5. Stop the engine.
6. Remove the key.
7. Wait for engine and all moving parts to stop before you leave the operator's seat.
8. Close fuel shut-off valve, if your machine is equipped.

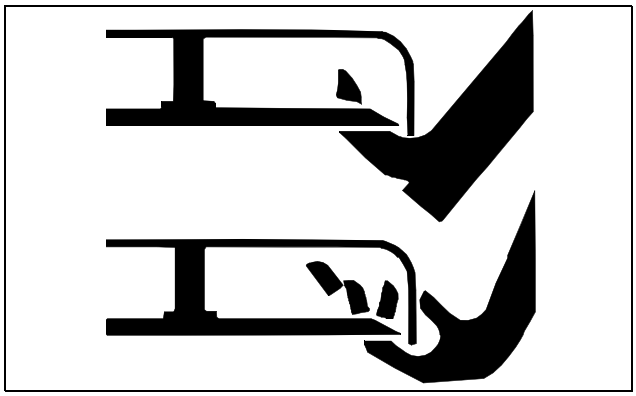
Checking Mowing Area



- Clear mowing area of objects that might be thrown. Keep people and pets out of mowing area.
- Study mowing area. Set up a safe mowing pattern. Do not mow where traction or stability is doubtful.
- Test drive area with mower lowered but not running. Slow down when you travel over rough ground.

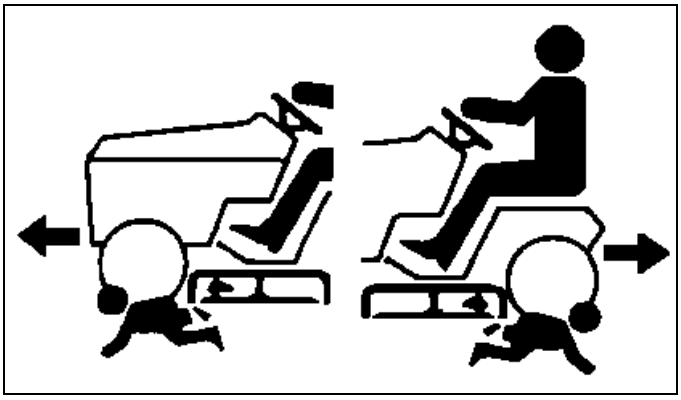
Rotating Blades are Dangerous

HELP PREVENT SERIOUS OR FATAL ACCIDENTS:



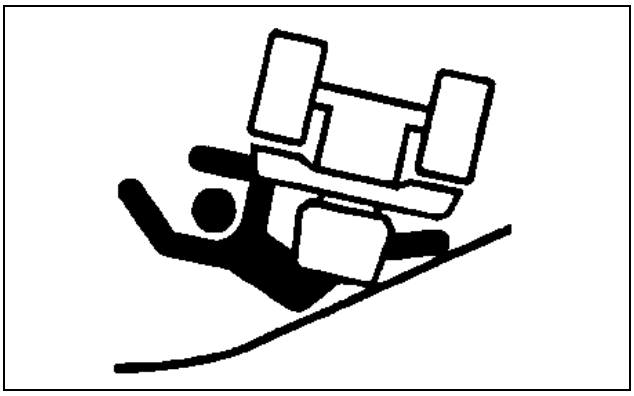
- Rotating blades can cut off arms and legs.
- Keep hands, feet and clothing away from mower deck when engine is running.
- Be alert at all times, drive forward carefully. People, especially children can move quickly into the mowing area before you know it.
- Before backing up, shut off PTO and look down and behind the machine carefully, especially for children.
- Do not mow in reverse.
- Shut off blades when you are not mowing.
- Do not operate machine if you are under the influence of drugs or alcohol.
- Park machine safely before inspecting or unplugging mower or bagger.

PROTECT CHILDREN:



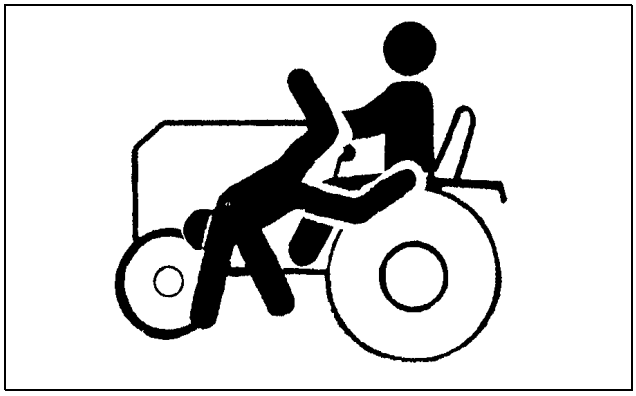
- Never assume that children will remain where you last saw them. Children are attracted to mowing activity, stay alert to the presence of children.
- Keep children indoors when you are mowing. Turn the machine off if a child enters the mowing area.
- Use extra care when you come to blind corners, shrubs, trees, or other objects that may block your vision.
- Do not let children or an untrained person operate the machine.
- Do not carry or let children ride on any attachment or machine even with the blades off. Do not tow children in a cart or trailer.

Avoid Tipping



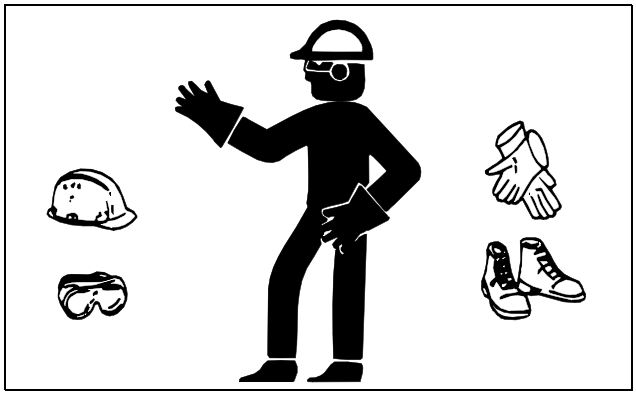
- Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. If you cannot back up the slope or if you feel uneasy on it, do not mow it.
- Do not drive where machine could slip or tip.
- Stay alert for holes and other hidden hazards in the terrain.
- Keep away from drop-offs, ditches and embankments.
- Slow down before you make a sharp turn or operate on a slope. Choose a low gear so that you will not have to stop or shift while on the slope.
- Limit loads to those you can safely control. Use only approved hitches when pulling loads or using heavy equipment. Use counterweights or wheel weights as required in this manual or your attachment manual.
- Use wheel weights for added stability when operating on slopes or using rear mounted attachments.
- Drive up and down a hill - not across. Turn slowly and turn downhill. Do not shift to neutral and coast downhill.
- Do not stop when going up hill or down hill. If machine stops going up hill, disengage mower blades and back down slowly.
- Mowing when grass is wet can cause reduced traction and sliding.
- Do not try to stabilize the machine by putting your foot on the ground.

Keep Riders Off



- Only allow the operator on the machine. Keep riders off.
- Riders on the machine or attachment may be struck by foreign objects or thrown off the machine causing serious injury.
- Riders obstruct the operator's view resulting in the machine being operated in an unsafe manner.

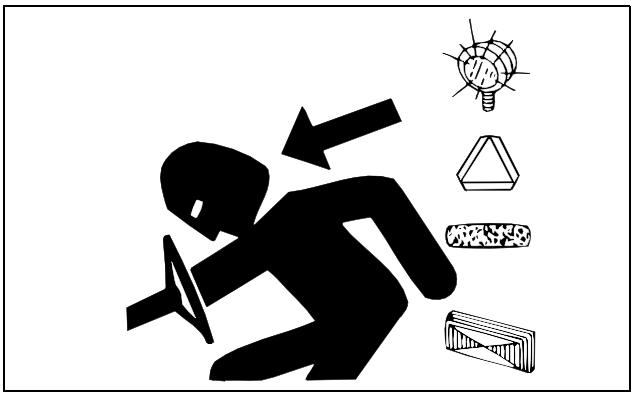
Wear Appropriate Clothing



- Wear close fitting clothing and safety equipment appropriate for the job.
- Always wear safety goggles or safety glasses with side shields when operating the mower.
- Wear a suitable protective device such as earplugs. Loud noise can cause impairment or loss of hearing.
- Do not wear radio or music headphones. Safe service and operation requires your full attention.

Driving Safely on Public Roads

Avoid personal injury or death resulting from a collision with another vehicle on public roads:



- Use safety lights and devices. Slow moving machines when driven on public roads are hard to see, especially at night.
- Use extra care when loading or unloading the machine into a trailer or truck.
- Whenever driving on public roads, use flashing warning lights and turn signals according to local regulations. Extra flashing warning lights may need to be installed.

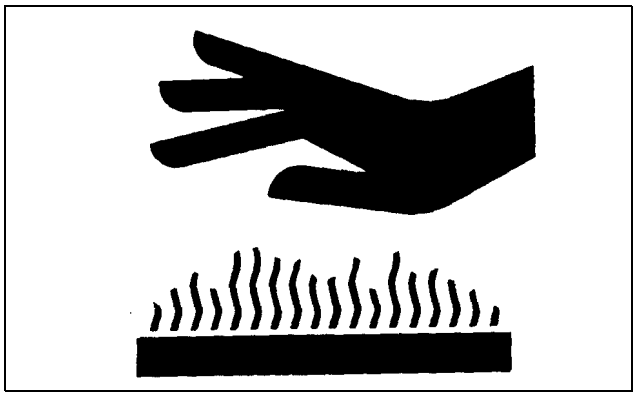
Practice Safe Maintenance

- Understand service procedure before doing work. Keep area clean and dry.
- Never lubricate, service, or adjust machine while it is moving. Keep safety devices in place and in working condition. Keep hardware tight.
- Keep hands, feet, clothing, jewelry, and long hair away from any moving parts, to prevent them from getting caught.
- Lower attachments to the ground before servicing

machine. Disengage all power and stop the engine. Lock park brake and remove the key. Let machine cool.

- Disconnect battery or remove spark plug wire before making any repairs.
- Before servicing the machine, carefully release pressure from any components with stored energy, such as hydraulic components.
- Keep all nuts and bolts tightened, especially blade attachment bolts.
- Securely support any machine elements that must be raised for service work.
- Never run engine unless park brake is locked.
- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Replace all worn or damaged safety and instruction decals.
- To prevent fires, remove any buildup of grease, oil, or debris from the machine, especially the engine compartment.
- Charge batteries in an open, well-ventilated area, away from sparks. Unplug battery charger before connecting or disconnecting from the battery. Use insulated tools.
- Do not modify machine or safety devices. Unauthorized modifications may impair its function and safety.
- Do not wear radio or music headphones while servicing the machine. Safe service requires your full attention.

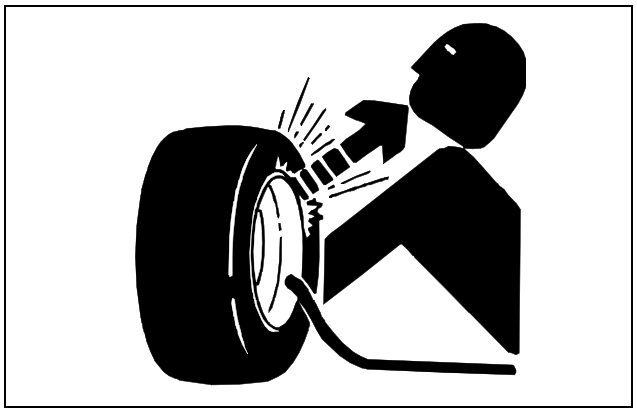
Prevent Fires



- Never remove fuel cap, or add fuel with engine running or hot. Allow engine to cool for several minutes.
- Never store equipment with fuel in the tank inside a building where fumes may reach an open flame or spark.
- Allow engine to cool before storing in any enclosure.
- To reduce fire hazard, keep engine free of grass, leaves, or excessive grease.

Tire Safety

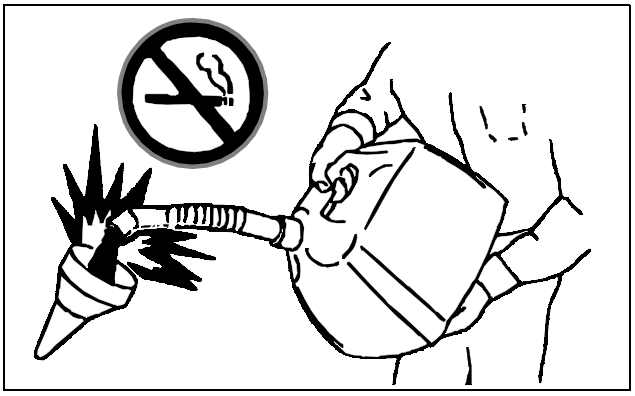
Explosive separation of a tire and rim parts can cause serious injury or death:



- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
- Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly.
- Check tires for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

Handling Fuel Safely

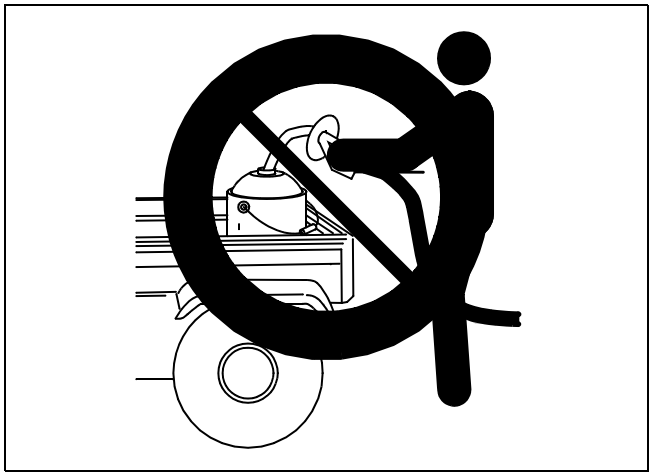
Fuel and fuel vapors are highly flammable:



- Do not refuel machine while you smoke, when machine is near an open flame or sparks, or when engine is running. stop engine and allow to cool before filling.
- Never remove the fuel cap or add fuel with the engine

running.

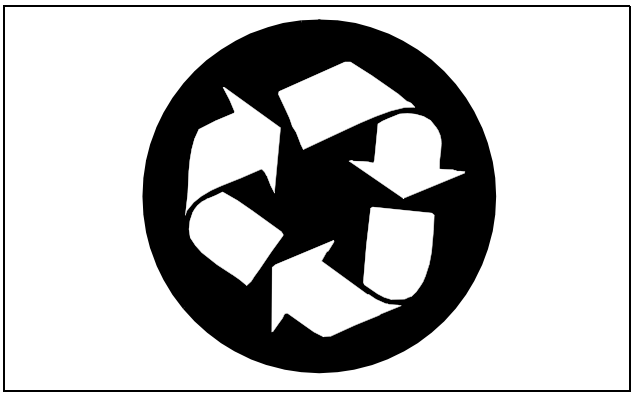
- Never fill fuel tank or drain fuel from a machine in an enclosed area. Fill fuel tank outdoors.
- Prevent fires. Clean up spilled fuel immediately.
- Do not store machine with fuel in tank in a building where fumes may reach an open flame or spark.
- Prevent fire and explosion caused by static electric discharge. Use only non-metal, portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials (ASTM). If using a funnel, make sure it is plastic and has no screen or filter.



- Static electric discharge can ignite gasoline vapors in an ungrounded fuel container. Remove the fuel container from the bed of a vehicle or the trunk of a car and place on the ground away from the vehicle before filling. Keep nozzle in contact with container opening while filling.
- When practical, remove equipment from trailers or truck beds and refuel them on the ground. If this is not possible, use a portable, plastic fuel container to refuel equipment on a truck bed or trailer.
- For gasoline engines, do not use gas with methanol. Methanol is harmful to your health and to the environment.

Handling Waste Product and Chemicals

Waste products, such as, used oil, fuel, coolant, brake fluid, and batteries, can harm the environment and people:



- DO NOT use beverage containers for waste fluids - someone may drink from them.
- See your local Recycling Center or John Deere dealer to learn how to recycle or get rid of waste products.
- A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. The seller of the chemical products used with your machine is responsible for providing the MSDS for that product.

Daily Operating Checklist

❑ Test safety systems.

❑ Check tire pressure.

❑ Check fuel level.

❑ Check engine oil level.

❑ Remove grass and debris from machine.

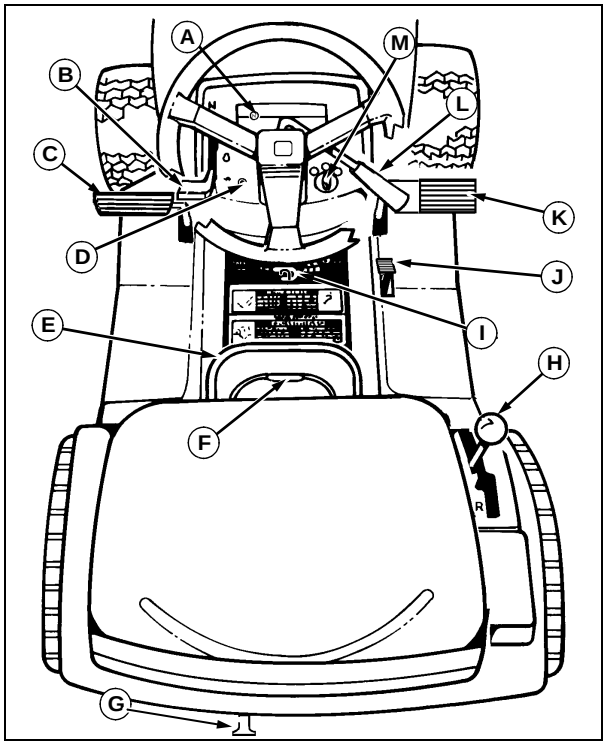
❑ Clean air intake screen.

❑ Check area below machine for leaks.

Avoid Damage to Plastic and Painted Surfaces

- Do not wipe plastic parts unless rinsed first.
- Insect repellent spray may damage plastic and painted surfaces. Do not spray insect repellent near machine.
- Be careful not to spill fuel on machine. Fuel may damage surface. Wipe up spilled fuel immediately.

Operator Station Controls



A - Choke Knob (V-Twin)

B - Throttle/Choke Control

C - Foot Pedal - Brake/Clutch/Return to Neutral

D - Reverse Implement Option Switch

E - Attachment Lift Lever

F - Locking Lever

G - Free Wheeling Knob (Automatic Models)

H - Hand Lever: Transmission Shift Lever (Hand Control Units) (or) Cruise Control Lever (Foot Control Units)

I - Park Brake

J - Foot Pedal, Reverse (Foot Control Units)

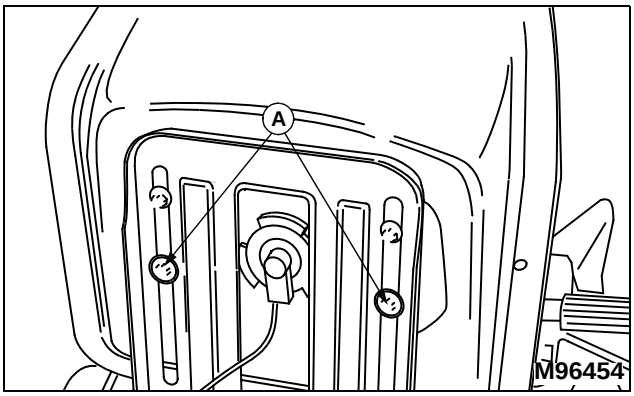
K - Foot Pedal, Forward (Foot Control Units)

L - PTO Drive Lever

M - Ignition Switch

Adjusting Seat

1. Tip seat forward.

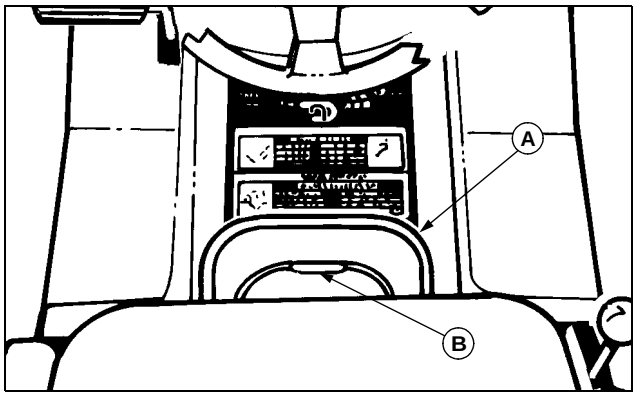


Picture Note: Model with capscrew adjuster used for illustration.

2. Loosen two cap screws (A) two turns.
3. Slide seat forward or rearward on mounting bracket to desired position.
4. Tighten cap screws or knobs.
5. Lower seat.

Adjusting Cutting Height

Cutting height can be adjusted from approximately 38 – 100 mm (1-1/2 – 4 in).



1. Push down on lift lever (A) slightly and hold locking lever (B) down with thumb.
2. Move lift lever to desired cutting height.
3. Release locking lever to keep lift lever in position.
4. Adjust gage wheels.

Adjusting Mower Deck Wheels

CAUTION: Avoid injury! Rotating blades are dangerous. Before adjusting or servicing mower:

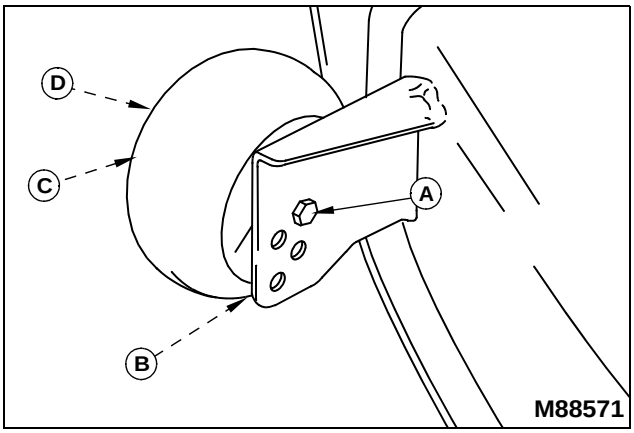
- **Disconnect spark plug wire(s) to prevent engine from starting accidently.**
- **Always wear gloves when handling mower blades or working near blades.**

IMPORTANT: Avoid damage! The mower deck can be damaged if mower wheels are adjusted wrong:

- **Wheels must not ride on ground supporting mower weight.**
- **Check wheel adjustment each time cutting height is changed.**

1. Park machine safely. (See Parking Safely in the Safety Section.)
2. Inflate tires to the correct pressure.
3. Raise lift lever to transport position and adjust cutting height.
4. Move lift lever to mowing position.

NOTE: Bottom of wheels should be approximately 6-13 mm (1/4-1/2 in.) from the ground.



5. Check mower wheel position. Remove bolt (A), bushing (B), washer (C), and nut (D) and move mower wheels to proper hole.
6. Install bolt and tighten with nut to lock wheels in position.

Adjusting Mower Level (Side-to-Side)

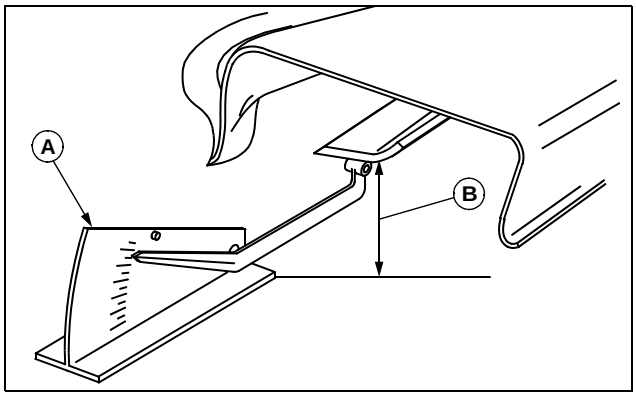
CAUTION: Avoid injury! Rotating blades are dangerous. Before adjusting or servicing mower:

- **Disconnect spark plug wire(s) to prevent engine from starting accidently.**
- **Always wear gloves when handling mower blades or working near blades.**

NOTE: Mower wheels should not contact the ground when leveling the deck.

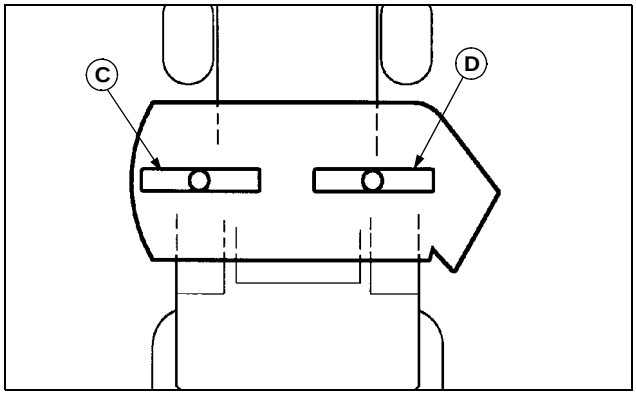
1. Park machine safely on a level surface. (See Parking Safely in the Safety Section).
2. Inflate tires to the correct pressure.
3. Adjust cutting height to middle position.
4. Put lift lever in mowing position.

NOTE: The difference between blade measurements must not be more than 3 mm (1/8 in).

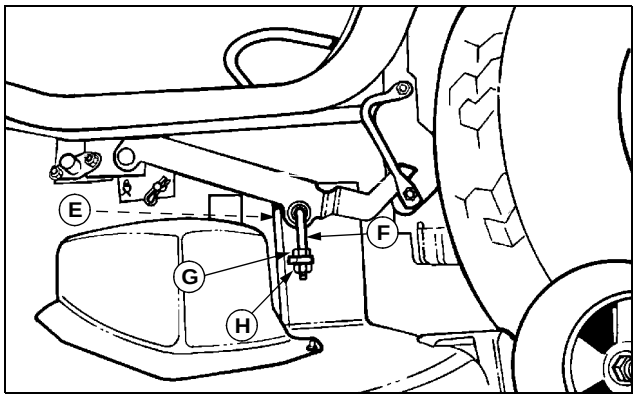


Picture Note: A convenient leveling gauge (A) is available from your Authorized Service Center.

5. Position mower blades as follows and measure from each outside blade tip (B) to the level surface.



- Turn left blade (C) as shown. Hold drive belt and turn right blade (D) as shown. Take measurement for both blades.



6. Loosen top clamping nut (E) facing inside of mower, on left hand side J-bolt (F), approximately one turn.

7. Loosen upper adjusting nut (G).

8. Adjust lift links by turning lower adjusting nut (H) clockwise to raise left side of mower, counterclockwise to lower left side of mower.

9. Tighten upper adjusting nut.

10. Tighten clamping nut.

11. Measure blade tips again and adjust if necessary.

Adjusting Mower Level (Front-to-Rear)

CAUTION: Avoid injury! Rotating blades are dangerous. Before adjusting or servicing mower:

- **Disconnect spark plug wire(s) to prevent engine from starting accidently.**
- **Always wear gloves when handling mower blades or working near blades.**

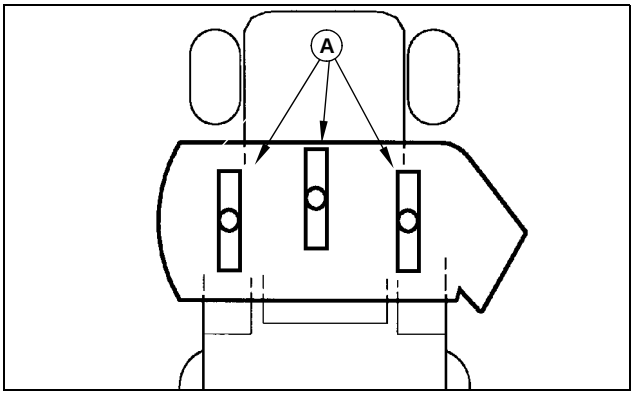
IMPORTANT: Avoid damage! Make sure each front draft rod is equally tensioned. The installed rods should exhibit identical amounts of movement between left and right rods. If one rod moves more freely than the other, the adjustment nut should be tightened until the movement of the assembly matches that of the other side.

1. Park machine safely on a level surface. (See Parking Safely in the Safety Section).

2. Inflate tires to the correct pressure.

3. Adjust cutting height to middle position.

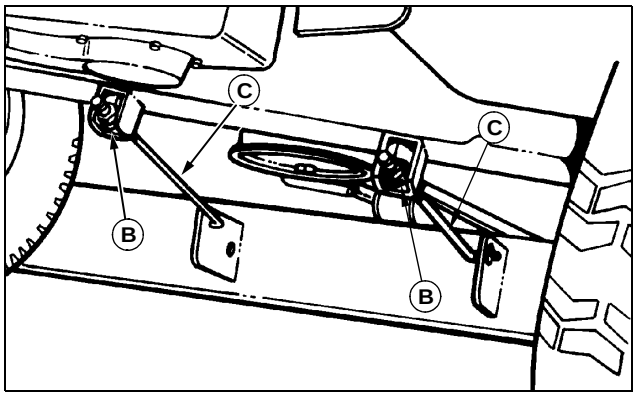
4. Put lift lever in mowing position.



5. Turn blades so front blade tips (A) point straight forward.

6. Measure from each blade tip to the surface.

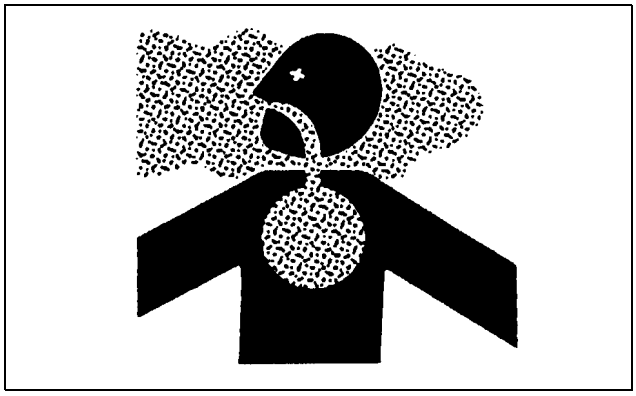
- The front blade tip must be 6–9 mm (1/4–3/8 in.) lower than rear blade tip.



7. Turn nuts (B) on front draft rods (C) equally until adjustment is correct. Turn nut clockwise to raise front of mower deck or counterclockwise to lower front of mower deck.

8. Measure blade tips again and adjust if necessary.

Testing Safety Systems



CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

Move the vehicle to an outside area before running the engine.

Do not run an engine in an enclosed area without adequate ventilation.

- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**

Use the following checkout procedure to check for normal operation of machine.

If there is a malfunction during one of these procedures, Do not operate machine. **See your John Deere dealer for service.**

Perform these tests in a clear open area. Keep bystanders away.

Testing Mower Engagement Lever Switch

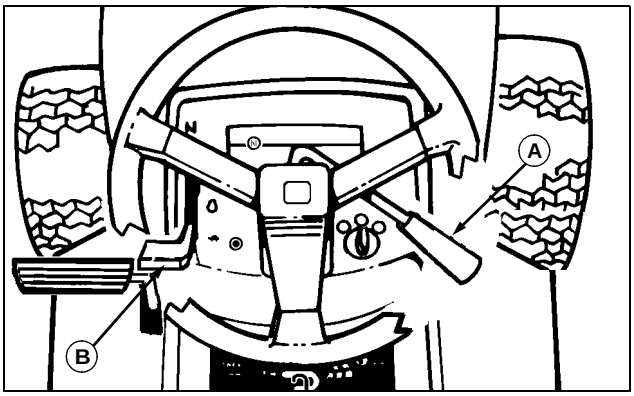
1. Sit on the seat.
2. Lock the park brake.
3. Push mower engagement lever (A) forward to engage.
4. Try to start engine.

Result: Engine must not start. If engine starts, there is a problem with your safety interlock circuit.

Testing Seat Switch

First Test:

1. Sit on seat.
2. Lock the park brake.

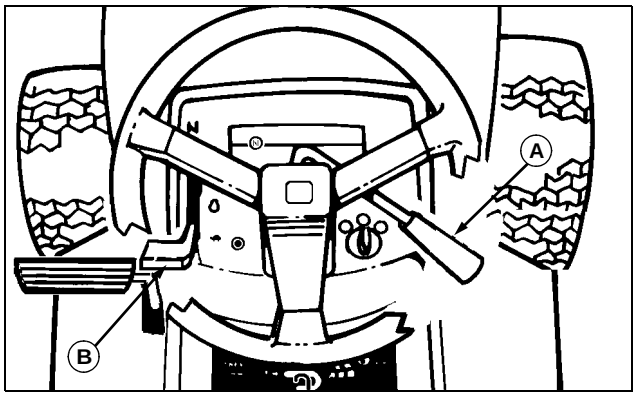


3. Pull mower engagement lever (A) back to disengage.
4. Start engine and move throttle lever (B) to half-speed position.
5. Push mower engagement lever (A) forward to engage.
6. Move throttle lever to fast speed position.
7. Raise up off of seat, but do not get off tractor.

Result: Engine will begin to stop. If engine does not begin to stop, there is a problem with your safety interlock circuit.

Second Test:

1. Sit on seat.
2. Lock the park brake.



3. Pull mower engagement lever (A) back to disengage.

4. Start engine and move throttle lever (B) to fast (🐇) speed position.

5. Raise up off of seat, but do not get off tractor.

Result: Engine should continue to run. If engine stops, there is a problem with your safety interlock circuit.

Testing Park Brake Switch

1. Sit on seat.

2. Unlock the park brake.

3. Pull mower engagement lever (A) back to disengage.

4. Try to start engine.

Result: Engine must not start. If engine starts, there is a problem with your safety interlock circuit.

Testing Park Brake

1. Shut the engine off and lock the park brake (A).

2. Put transmission in N (neutral).

3. Try to push machine manually. Use free-wheeling lever on units with an automatic transmission.

Result: Park brake must prevent machine from moving. If machine moves, parking brake needs to be adjusted.

Testing Reverse Implement Option (RIO)

1. Start engine.

2. Engage mower.

CAUTION: Avoid injury! Rotating blades are dangerous. Children or bystanders may be injured by runover and rotating blades.

Before backing up, carefully check the area around the machine.

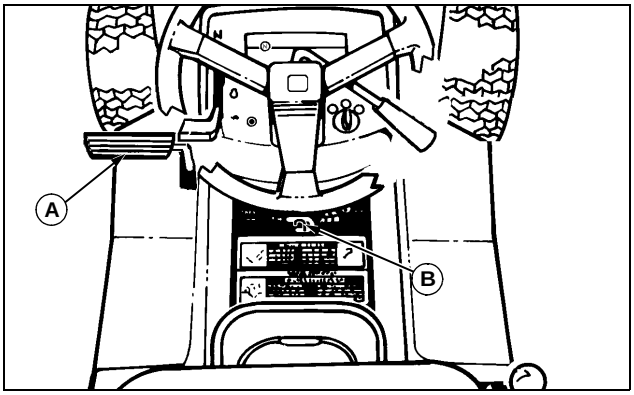
3. Look behind the vehicle to be sure there are no bystanders.

4. Begin reverse travel by depressing reverse foot pedal for Automatic transmission or moving gear shift lever to R (reverse) position for Gear transmission.

Result: Mower and engine should stop operation. If mower or engine continues to operate as tractor begins travel in reverse, do not continue to operate mower.

Using Park Brake

Locking park brake:



1. Push and hold brake pedal (A) down.

2. Move park brake lever (B) forward, then to the left to lock position.

3. Release brake pedal. Pedal should stay down and park brake lever should stay locked.

Unlocking park brake:

1. Push and hold brake pedal down.

2. Move park brake lever to the right, then to the rear.

3. Release brake pedal.

Starting Engine

CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

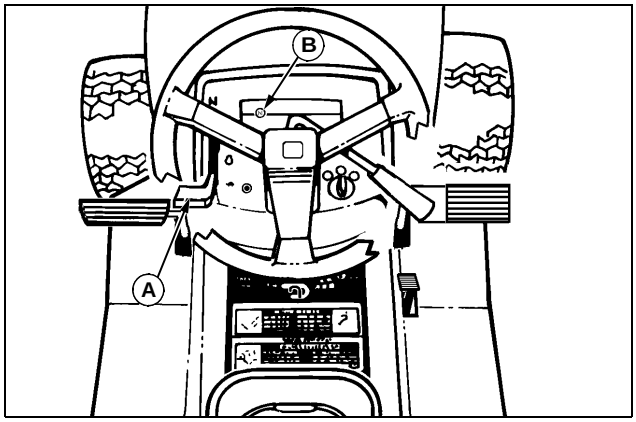
Move the vehicle to an outside area before running the engine.

DO NOT run an engine in an enclosed area without adequate ventilation.

- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**

NOTE: Engine will not start unless mower is disengaged and transmission is in neutral.

1. Disengage mower blades.
2. Lock the park brake.
3. Put transmission in neutral.
4. Check starting conditions:



Picture Note: Model 2046

- **If engine is cold:**

On Model 2046, move throttle lever (A) to the half-speed (🐢) position and pull out choke (⛽) knob (B). Gradually push in the choke knob after the engine starts and warms up.

On all other Models, move throttle lever (A) to the choke (⛽) position.

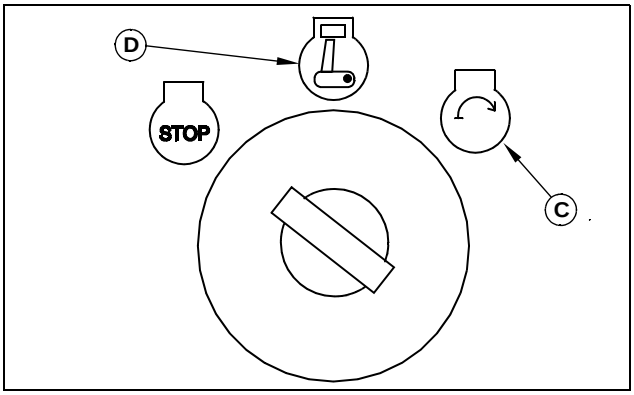
- **If engine is warm:**

On Model 2046, pull out choke (⛽) knob (B). Push choke knob in as soon as the engine starts.

On all other Models, move throttle lever (A) to the half-speed (🐢) position.

IMPORTANT: Avoid damage! Starter may be damaged if starter is operated for more than 20 seconds at a time:

- **Wait two minutes before trying again if engine does not start.**



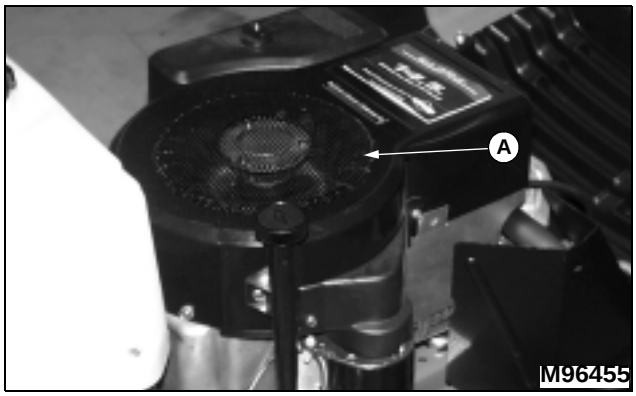
5. Turn key to start position (C) for no longer than five seconds.
6. Release key to run position (D) when engine starts.
   - If engine does not start, wait 10 seconds.
   - Turn key to start position again for no longer than 5 seconds.
   - Repeat procedure if necessary.

IMPORTANT: Avoid damage! Unnecessary engine idling may cause engine damage. Excessive idling can cause engine overheating, carbon build-up, and poor performance.

7. Let engine run at half-speed (🐢) position for a couple of minutes to warm-up before operating machine.

Idling Engine

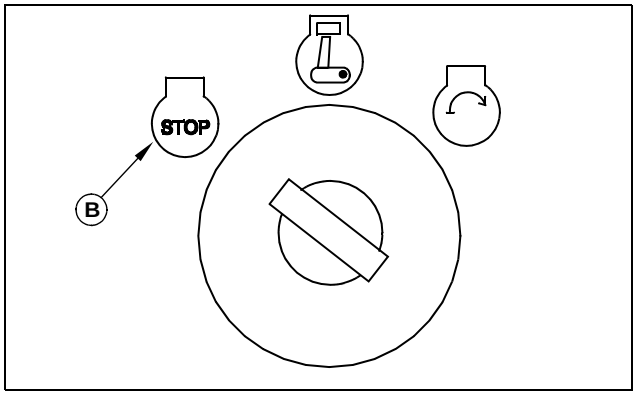
IMPORTANT: Avoid damage! Unnecessary engine idling may cause engine damage. Excessive idling can cause engine overheating, carbon build-up, and poor performance.



Engine is air cooled and needs a large volume of air to keep cool. Keep air intake screen (A) on top of engine clean.

Stopping Engine

1. Move throttle lever (A) to slow (🐢) position. Let engine run at low throttle a few seconds.



2. Turn key to stop position (B).
3. Lock the park brake.
4. Remove key.

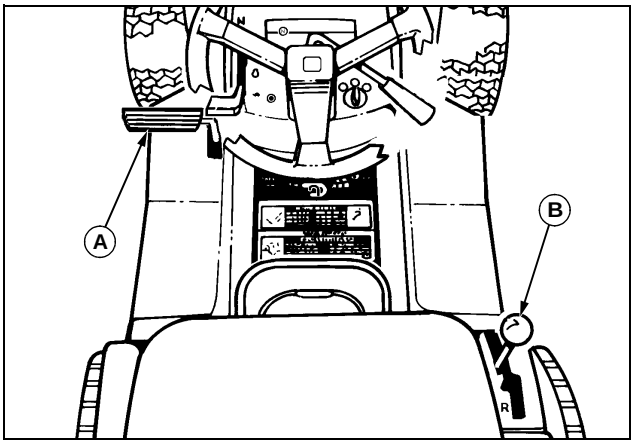
Using Travel Controls on Gear Transmission

CAUTION: Avoid injury! Children or bystanders may be injured by runover and rotating blades. Before traveling forward or rearward:

- **Carefully check the area around the machine.**
- **Disengage the mower before backing up.**

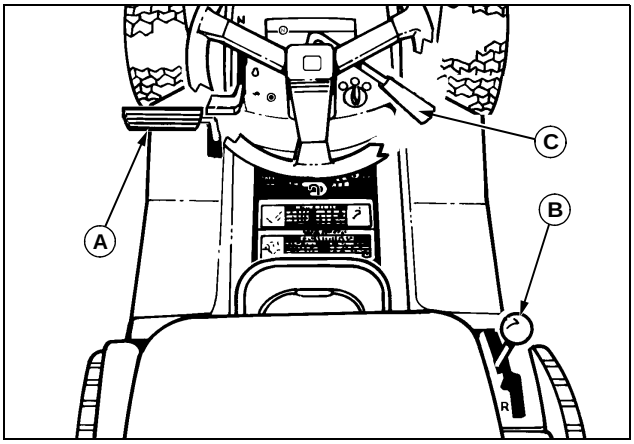
IMPORTANT: Avoid damage! Stop machine movement before shifting between reverse and forward to prevent transmission damage.

To travel forward:



1. Push clutch/brake pedal (A) all the way down to stop machine.
2. Move shift lever (B) to desired travel speed.
3. Release clutch/brake pedal slowly.

To travel in reverse:



1. Push clutch/brake pedal (A) all the way down.

NOTE: The engine and mower will stop as the gear shift lever is moved to R (reverse) if the mower engagement lever is not in the off position.

2. Put mower engagement lever (C) in the off position.
3. Look behind the vehicle to be sure there are no bystanders nearby.
4. Move shift lever (B) to R (reverse) position.
5. Release clutch/brake pedal slowly.

To stop travel:

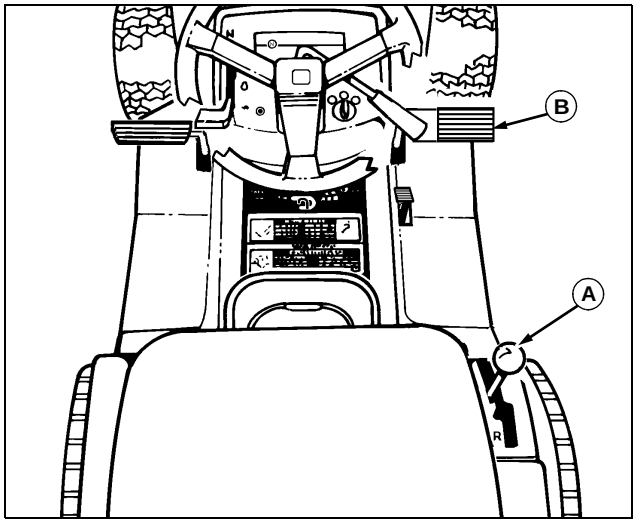
Push down clutch/brake pedal.

Using Travel Controls on Automatic Transmission

CAUTION: Avoid injury! Children or bystanders may be injured by runover and rotating blades. Before traveling forward or rearward:

- **Carefully check the area around the machine.**
- **Disengage the mower before backing up.**

To travel forward:



- Units with shift lever: Move transmission shift lever (A) to the right and forward to desired speed.
- Units with foot control: Push down the forward travel pedal (B).

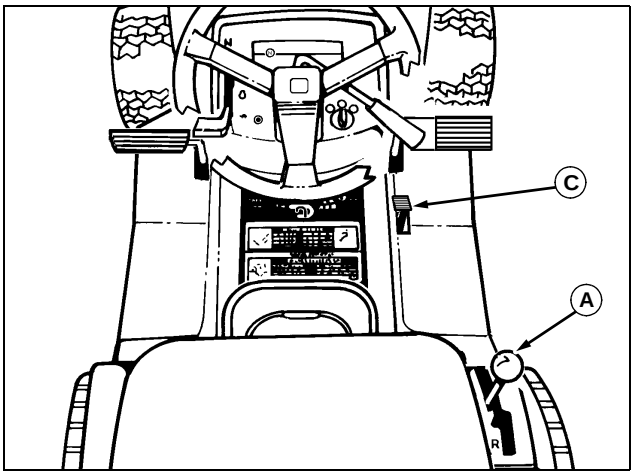
To travel in reverse:

IMPORTANT: Avoid damage! To prevent transmission damage, stop tractor movement before changing direction of travel.

When cruise control is not in use, hand lever should be returned manually, all the way rearward to OFF position. Otherwise, hand lever will restrict travel of reverse pedal linkage and reverse speed of tractor will be too slow.

NOTE: The engine and mower will stop as the shift lever is moved to R (reverse) or the reverse pedal is pushed if the mower engagement lever is not in the off position.

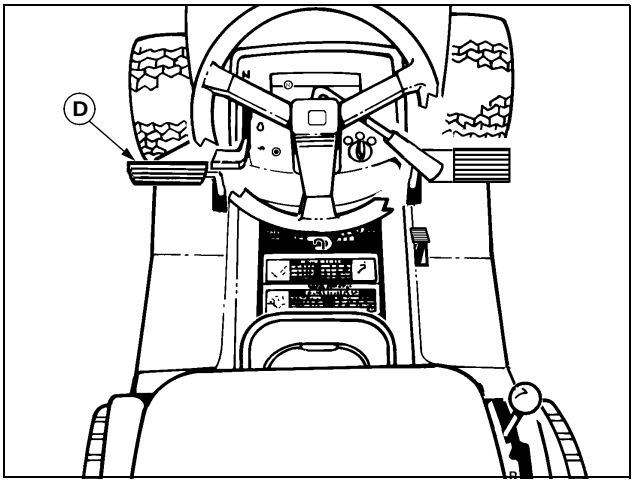
1. Put mower engagement lever in the off position.
2. Look behind the vehicle to be sure there are no bystanders nearby.



3. Units with shift lever: Move transmission shift lever (A) reward into the R (reverse) position.

Units with foot control: Push down the reverse travel pedal (C).

To stop travel:



- Units with shift lever: Push down on brake/clutch pedal (D). Transmission shift lever will automatically return to NEUTRAL position and brakes will be applied.
- Units with foot control: If cruise control is engaged, move lever to off position. Release travel pedals and unit will automatically return to neutral and stop. Push down on brake/clutch pedal (D). Brakes will be applied to assist in stopping.

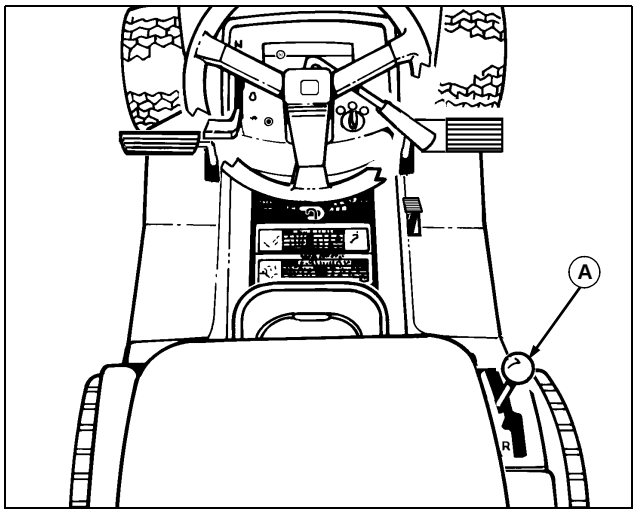
Using Cruise Control

CAUTION: Avoid injury! DO NOT use cruise control when going down hills. Tractor speed will increase. Operate tractor in a large, open area to learn how the cruise control works

IMPORTANT: Avoid damage! When cruise control is not in use, hand lever should be returned manually, all the way rearward to OFF position. Otherwise, hand lever will restrict travel of reverse pedal linkage and reverse speed of tractor will be too slow.

Use cruise control when you want to maintain travel speed without having to hold the forward travel pedal down. Cruise control operates only for forward travel.

Engage cruise control:



1. Put the cruise control lever (A) in the off position.
2. Move cruise control lever forward.
   - Move cruise control lever toward the (🐢) position to begin forward travel.
   - Increase tractor speed by moving the cruise control lever toward the (🐇) position.
   - Select desired speed and release lever.

Disengage cruise control:

1. Depress brake pedal or put cruise control lever in the off position

Using The Reverse Implement Option (RIO)

CAUTION: Avoid injury! Rotating blades are dangerous. Children or bystanders may be injured by runover and rotating blades.

Before backing up, carefully check the area around the machine.

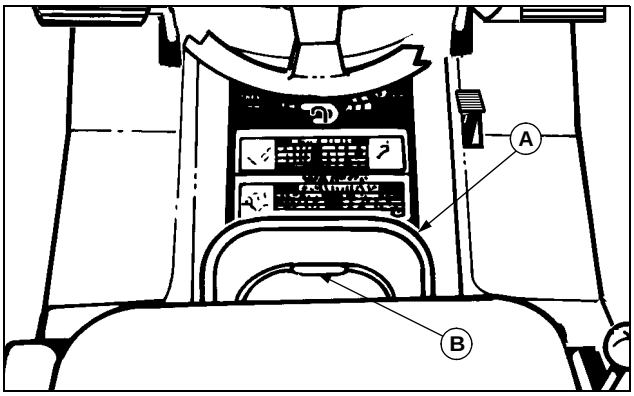
NOTE: Backing up while the mower is engaged is strongly discouraged. The Reverse Implement Option should be used ONLY when operating another attachment or when the operator deems it necessary to reposition the machine with the mower engaged.

1. Stop forward travel.
2. Look behind the vehicle to be sure there are no bystanders.
3. Push and hold in the reverse implement switch (A) while depressing reverse foot pedal slightly for Automatic Transmission OR moving the gear shift lever to the R (reverse) position for Gear Transmission.

NOTE: If the engine and mower stop while repositioning the machine, return the mower engagement lever to the off position. Start engine and engage mower. Begin again with Step 2.

4. Release the reverse implement switch and reposition the machine as the machine begins to move rearward.
5. Resume forward travel. The mower should continue operating.
6. Repeat procedure to position the machine again.

Using Mower Lift Lever

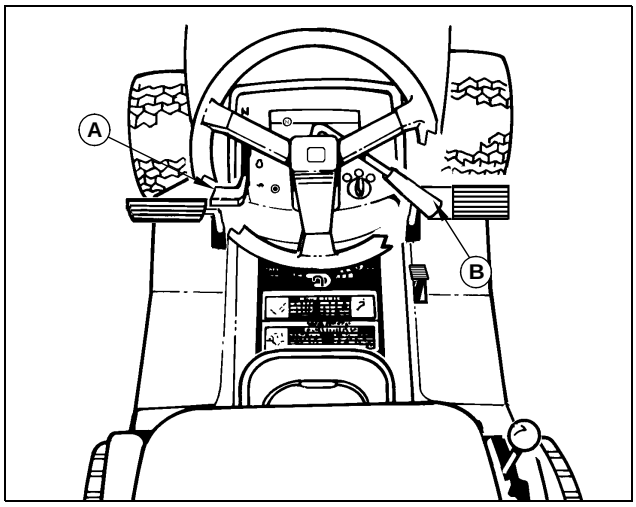


1. Push down on lift lever (A) slightly and hold locking lever (B) down with thumb.
2. Move lift lever (A) down to lower mower or up to raise mower.

3. Release locking lever lock (B) to keep lift lever (A) in position.

Using Mower

1. Start engine and allow it to idle for two to three minutes.
2. Lower mower to cutting height.



3. Push throttle lever (A) up to the full throttle ( ) position.
4. Push mower engagement lever (B) forward to start mower.
5. Pull lever (B) back to stop mower blades.

Mower Blade Selection

- Standard Blades: Designed for bagging, side discharging, and all mowing conditions.
- Bagging Blades: Designed for cutting and bagging thick, tall grass and/or leaves.

IMPORTANT: Avoid damage! Blades that are not specifically used for mulching, will destroy the mulch plug and may damage the tractor and mower deck. Mulching blades must be used with the mulch plug insert.

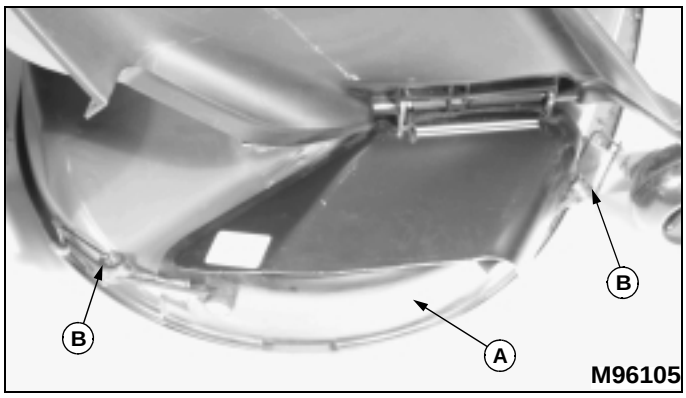
- Mulching Blades: Must be used only with the Mulch Plug. See your John Deere dealer.

Using Mower Deck Side Discharge (42-Inch Mower Deck)

CAUTION: Avoid injury! Before you adjust mower: STOP engine, remove key, and wait for blades to STOP.

Be careful, sharp edges on mower blades. Always wear gloves when handling mower blades.

NOTE: For maximum side discharge operation, it may be necessary to change the mower blades, see Servicing Mower Blades in the SERVICE MOWER section.



To set-up and operate the 42” deck for side discharge operation the factory installed mulch cover (A) must be removed.

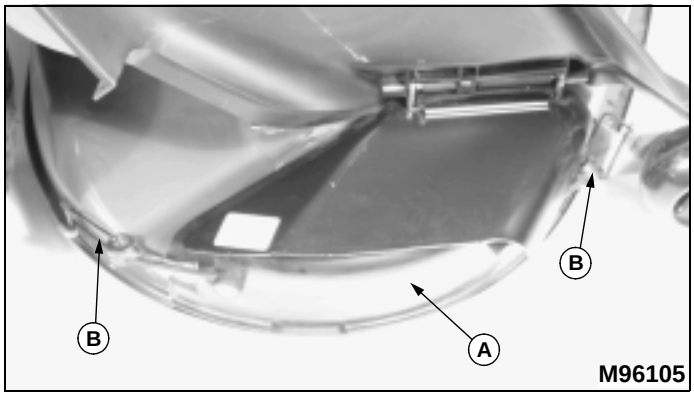
1. Remove mulch cover:
   - Lift plastic discharge chute.
   - Grasp corner of steel chute, pull outward to unlock and pivot up.
   - Unhook both rubber hooks (B) and remove mulch cover.
2. Store mulch cover in a well protected area and have it readily available for when you want to use deck as a mulching deck.

Using Mower Deck Mulch Ready (42-Inch Mower Deck)

CAUTION: Avoid injury! Before you adjust mower: STOP engine, remove key, and wait for blades to STOP.

Be careful, sharp edges on mower blades. Always wear gloves when handling mower blades.

NOTE: For maximum mulching operation, it may be necessary to change the mower blades, see Servicing Mower Blades in the SERVICE MOWER section.



To set-up and operate the 42” deck for mulching operation the factory installed mulch cover (A) must be installed.

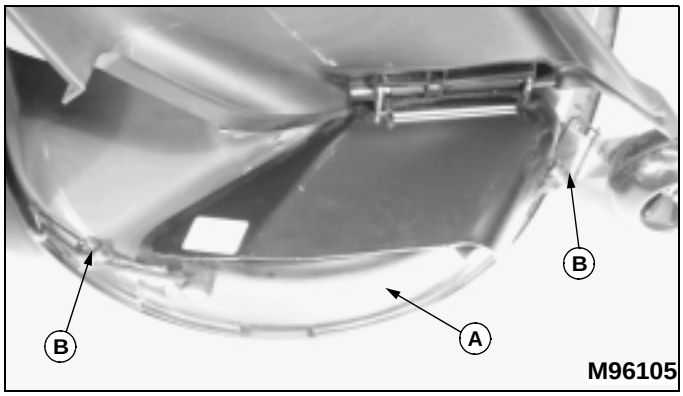
1. Install mulch cover:
   - Lift plastic discharge chute.
   - Grasp corner of steel chute, pull outward to unlock and pivot up.
   - Install mulch cover into deck discharge opening and hook both rubber hooks (B).

Using Mower Deck with Optional Equipment (42-Inch Mower Deck)

CAUTION: Avoid injury! Before you adjust mower: STOP engine, remove key, and wait for blades to STOP.

Be careful, sharp edges on mower blades. Always wear gloves when handling mower blades.

NOTE: For maximum mower deck operation, it may be necessary to change the mower blades, see Servicing Mower Blades in the SERVICE MOWER section.



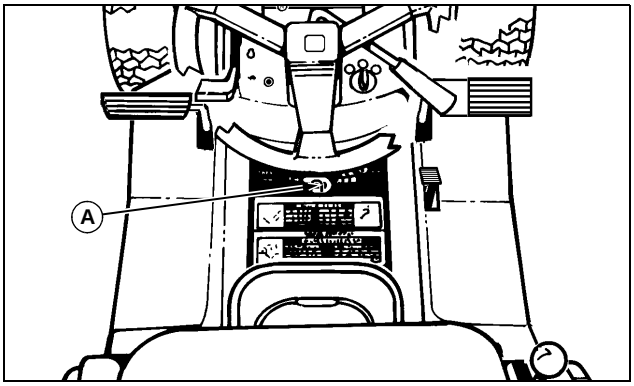
To set-up and operate the 42” deck for either the 2-Bag Bagger or Mulch Plug Kit the factory installed mulch cover (A) must be removed.

1. Remove mulch cover:
   - Lift plastic discharge chute.
   - Grasp corner of steel chute, pull outward to unlock and pivot up.
   - Unhook both rubber hooks (B) and remove mulch cover.
2. Store mulch cover in a well protected area and have it readily available for when you want to use deck as a standard mulching deck.

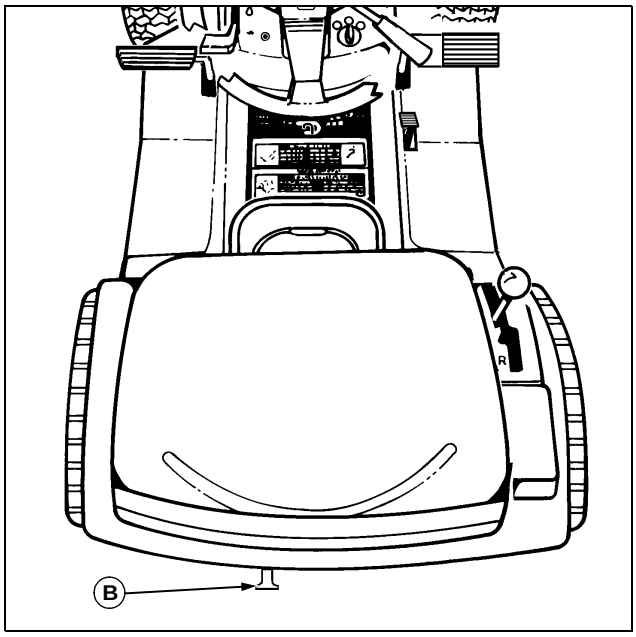
Pushing Machine

IMPORTANT: Avoid damage! Transmission damage may occur if the machine is moved or towed incorrectly:

- **Move unit by hand only.**
- **DO NOT use another vehicle to move unit.**
- **DO NOT tow unit.**



1. Unlock the park brake (A).
2. Put transmission in N (neutral).



3. **On Automatic Models:** Pull out on free-wheeling lever (B).

4. Push machine to desired location.

IMPORTANT: Avoid damage! The transmission might be damaged if the free-wheeling lever is not pushed back in completely before attempting to start the engine. DO NOT start or operate the machine with the free-wheeling lever pulled out.

5. **On Automatic Models:** Push free-wheeling lever back in.

Unplugging Mower or Optional Bagger

CAUTION: Avoid injury! Rotating blades are dangerous:

- **Park the machine safely and lock the park brake before getting off the seat.**
- **Turn the mower off.**
- **Stop the engine.**

Before getting off the seat:

1. Stop machine.
2. Disengage mower blades.
3. Move throttle lever to slow (🐢) position.
4. Lower mower to the ground.
5. Lock the park brake.
6. Stop the engine.
7. Remove the key.
8. Wait for all moving parts to stop.

Transporting Machine on Trailer

Be sure trailer has all the necessary lights and signs required by law.

IMPORTANT: Avoid damage! Transmission damage may occur if the machine is moved or towed incorrectly:

- **Move unit by hand only.**
- **Do not use another vehicle to move unit.**
- **Do not tow unit.**

1. Drive forward onto heavy-duty trailer.
2. Lower mower to trailer deck.
3. Lock park brake.
4. Fasten lawn tractor to trailer with heavy-duty straps, chains, or cables. Both front and rear straps must be directed down and outward from tractor.
5. Strap down hood.

Avoid Using Ground Engaging Equipment

IMPORTANT: Avoid damage! This tractor is not intended for use with ground engaging equipment. Use of such equipment could result in damage to transmission components.

This tractor is not intended for use with ground engaging equipment such as a rear tiller, disk, plow or rear mounted scraper blade.

Using Wheel Weights

- Install front wheel weights for added stability and steering control when you use equipment such as the rear-mounted grass bagger.
- Install rear wheel weights when using the front blade or snowthrower.
- Remove wheel weights when not required.

Using Tire Chains

Tire chains are recommended for use with snowthrower and, under certain conditions, the front blade.

See your Authorized Service Center for Tire Chains.

Mowing Tips

The following recommendations will produce the best lawn cut quality and appearance:

- Keep mower blades sharp. Dull blades will tear grass; tips of grass will then turn brown.
- Cutting grass too short may kill grass and let weeds grow easily.
- Adjust cutting height to remove only 1/3 of the grass at a time.
- Mow grass often. Short grass clippings will decay quickly.
- Mow with engine at full throttle.
- Adjust travel speed to match mowing conditions:
    - Travel at SLOW speed when you mow thick, tall grass, make sharp turns or trim around objects.
    - Travel at MODERATE speed when you mow thin grass.
- Use a different mowing pattern each time you mow. Overlap mowing paths 50 to 100 mm (2 to 4 in).
- Drive over ridges and through shallow ditches straight-on, not at an angle.
- A thick layer of mulched leave can prevent sunlight from getting to grass and smother it. Taller grass heights allow mulched leaves to dispense easier in lawn. Mulch leaves several times if needed.
- Use a thatcher in late spring or summer to pull up dead grass and aerate ground.

Service Literature

If you would like a copy of the Parts Catalog or Technical Manual for this machine call:

- **U.S. & Canada**: 1-800-522-7448.
- **All Other Regions**: Your John Deere dealer.

Parts

We recommend John Deere quality parts and lubricants, available at your Authorized Service Center.

Part numbers may change, use part numbers listed below when you order. If a number changes, your dealer will have the latest number.

When you order parts, your Authorized Service Center needs your machine serial number and engine serial number. These are the numbers that you have recorded on the inside front cover of this manual.

Touch-up paint is available in 340 grams (12 oz.) aerosol cans. Scotts Orange (part number: TY24745) and Scotts Grey (part number: TY 24747)

Part Numbers

ITEM	PART NUMBER
Air Cleaner Element (Foam):	
• S1642	M92360
• S1742	LG272403S
• S2046	LG273638
Air Cleaner Element (Paper):	
• S1642	LG496894JD
• S1742	LG496894JD
• S2046	LG499486
Fuel Filter	AM38708
Oil Filter	AM125424
Battery	TY21752
Spark Plug	M78543 (Champion RC12YC)
Fuse-15 amp	99M7065
Headlight Bulb	AD2062R (GE-1156)

ITEM	PART NUMBER
Ground Drive Belts:	
• S1642	GX10851
• S1742	GX10062
• S2046	GX10644
Belts:	
• 42-Inch Mower Drive Belt	M124895
• 46-Inch Mower Drive Belt	GX10176
Blades 42-Inch Deck:	
• Standard	M139802 or M139803
• Bagging	M139803
• Mulching	M139802
Blades 46-Inch Deck:	
• Standard	M127466
• Bagging	N/A
• Mulching	M119232
Leveling Gauge	TY15272

(Part numbers are subject to change without notice. Part Numbers may be different outside the U.S.A.)

SERVICE INTERVALS

Servicing Your Machine

IMPORTANT: Avoid damage! Operating in extreme conditions may require more frequent service intervals:

- **Engine components may become dirty or plugged when operating in extreme heat, dust or other severe conditions.**
- **Engine oil and spark plugs may lose efficiency if vehicle is operated constantly at slow or low engine speeds or with frequent short trips.**

Please use the following timetables to perform routine maintenance on your machine.

Before Each Use

- Check fuel level.
- Check engine oil level.
- Clean air intake screen.
- Check safety systems.
- Check tire pressure.
- Check/tighten loose hardware.

After First 2 Hours

- Check blade belt tension.

After First 5 Hours

- Change engine oil.

Every 8 Hours

- Check engine oil level.
- Check brakes.
- Check tire pressure.

Every 25 Hours or Annually (whichever comes first)

- Lubricate front wheel spindles and wheel bearings.
- Check/clean battery.

Every 25 Hours

- Sharpen/replace blades.
- Check and clean air cleaner element, (service more frequently under dusty conditions).
- Change engine oil when operating under heavy load or in high temperatures, (service more frequently under dusty conditions).
- Check spindle brake measurement.

Every 50 Hours

- Change engine oil, (service more frequently under dusty conditions).

Every 100 Hours

- Check/tighten loose hardware.
- Adjust drive belt tension.
- Replace oil filter.
- Check and clean air cleaner element, (service more frequently under dusty conditions).
- Replace spark plug.
- Replace fuel filter.

Every Season

- Adjust blade belt tension.
- Check spindle brake measurement.

Grease

IMPORTANT: Avoid damage! Use recommended John Deere greases to avoid component failure and premature wear.

The recommended John Deere greases are effective within an average air temperature range of -29 to 135 degrees C (-20 to 275 degrees F).

If operating outside that temperature range, contact your Servicing dealer for a special-use grease.

The following greases are preferred:

- John Deere Multi-Purpose SD Polyurea Grease
- John Deere Multi-Purpose HD Lithium Complex Grease
- John Deere Moly High Temperature EP Grease

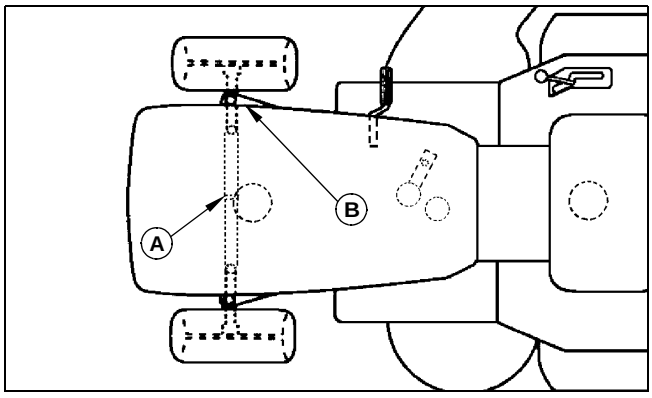
If not using any of the preferred greases, be sure to use a general all-purpose grease with an NLGI grade No.2 rating.

Wet or high speed conditions may require use of a special-use grease. Contact your Servicing dealer for information.

Lubricating Front Wheel Spindles

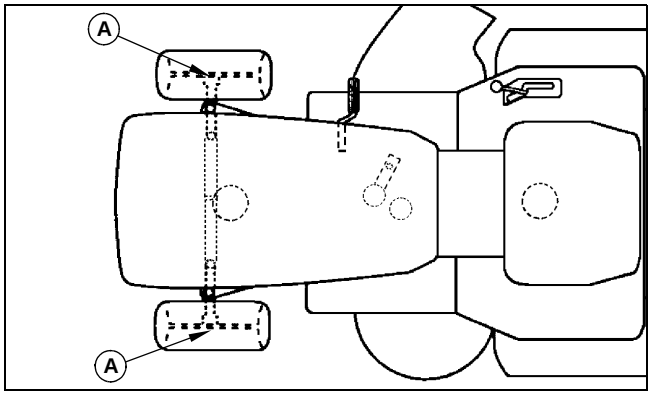
1. Lubricate grease fittings (A) on spindles with one or two shots of grease.
2. Turn wheels to distribute grease on spindles.

Lubricating Front Axle Pivot and Drag Link



1. Lubricate front axle center pivot (A) and drag link (B) with one or two shots of grease.
2. Pivot axle up and down to distribute grease.

Lubricating Front Wheel Bearings (On 2046 Model)



1. Lubricate front wheel bearings (A) with one or two shots of grease.
2. Turn wheels to distribute grease in bearings.

Engine Warranty Maintenance Statement

Maintenance, repair, or replacement of the emission control devices and systems on this engine, which are being done at the customers expense, may be performed by any non-road engine repair establishment or individual. Warranty repairs must be performed by an authorized John Deere dealer.

Avoid Fumes

CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

Move the vehicle to an outside area before running the engine.

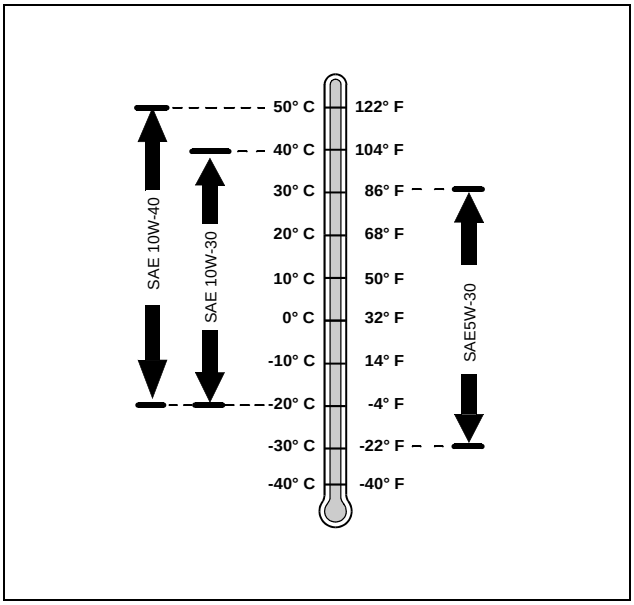
Do not run an engine in an enclosed area without adequate ventilation.

- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**

Engine Oil (Gas)

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following John Deere oils are preferred:



- TURF-GARD®
- PLUS-4®

Other oils may be used if above John Deere oils are not available, provided they meet the following specification:

- API Service Classification SG or higher

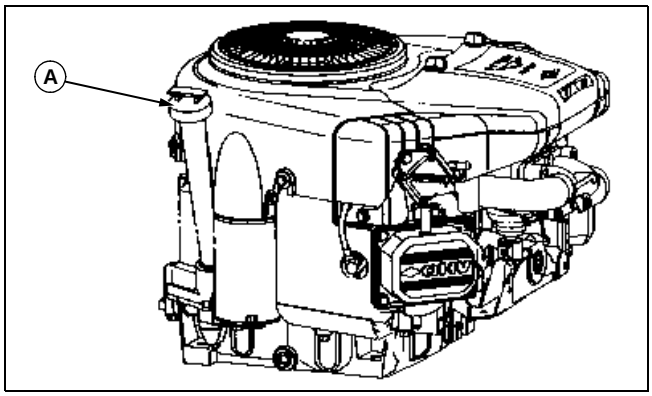
Checking Engine Oil Level

IMPORTANT: Avoid damage! Failure to check the oil level regularly could lead to serious engine problems if oil level is low:

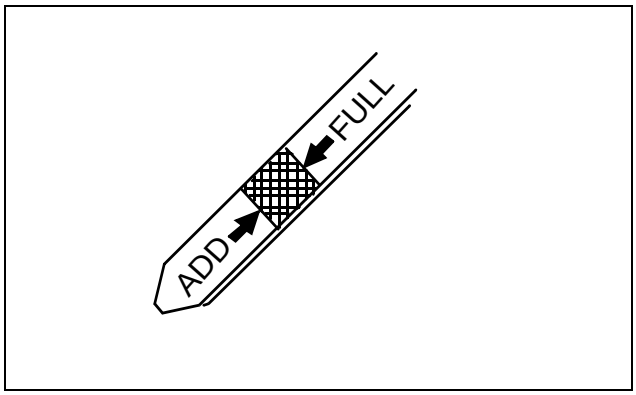
- **Check oil level before operating.**
- **Check oil level when the engine is cold and not running.**
- **Keep level between the FULL and the ADD marks.**
- **Shut off engine before adding oil.**

NOTE: Check oil twice a day if you run engine over 4 hours in a day.

1. Park machine safely. (See Parking Safely in the Safety Section.)
2. Lift hood.
3. Clean area around dipstick to prevent debris from falling into crankcase.



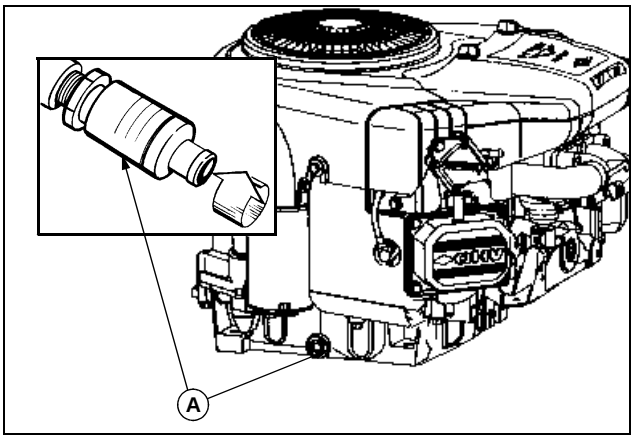
4. Remove dipstick (A). Wipe with clean cloth.
5. Install dipstick:
   - **S1642**: Install dipstick in tube, but DO NOT tighten it. Let dipstick threads rest on top of tube, turn cap counterclockwise until it “clicks” or starts to engage threads.
   - **S1742 and S2046**: Install and tighten dipstick.
6. Remove dipstick.



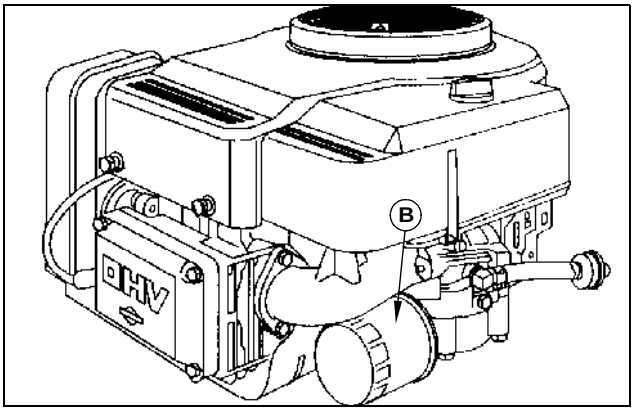
7. Check oil level on dipstick.Oil must be between ADD and FULL marks.
8. If oil level is low, add oil to bring oil level no higher than FULL mark on dipstick.
9. Install and tighten dipstick. Lower hood.

Changing Engine Oil and Filter

1. Run engine to warm oil.
2. Park machine safely. (See Parking Safely in the Safety Section.)
3. Put drain pan under drain valve.



4. Unsnap the dust cap, push and twist to open valve (A).
5. Drain oil into oil drain pan. Allow oil to drain completely.
6. Remove dipstick.



7. Wipe dirt from around oil filter (B).
8. Place a drain pan or funnel under filter tray.
9. Remove old filter and wipe off filter tray.
10. Put a light coat of fresh, clean oil on the filter gasket.
11. Install replacement oil filter by turning oil filter to the right (clockwise) until the rubber gasket contacts filter base. Tighten filter an additional one-half turn.
12. Close drain valve.
13. Install drain cap.
14. Add oil.
15. Install dipstick.
16. Start and run engine at idle to check for leaks. Stop engine. Fix any leaks before operating.
17. Check oil level, add oil if necessary.

Cleaning Air Intake Screen and Engine Fins

IMPORTANT: Avoid damage! The engine is air-cooled and requires a large amount of air intake when running. Reduced air intake can cause overheating:

- **Keep air intake screen and cooling fins clean.**
- **Keep covers and screens in place.**

1. Park machine safely. (See Parking Safely in the Safety Section.)

2. Clean air intake screen (A), cooling fins and external surfaces (B), with rag, brush, vacuum or compressed air.

Checking and Cleaning Air Cleaner Elements (Model S1642)

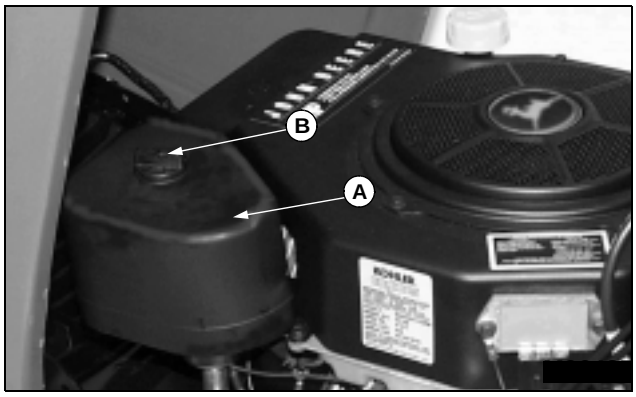
1. Park machine safely. (See Parking Safely in the Safety Section.)

CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine and components will be hot if the engine has been running. Allow the engine to cool before servicing.

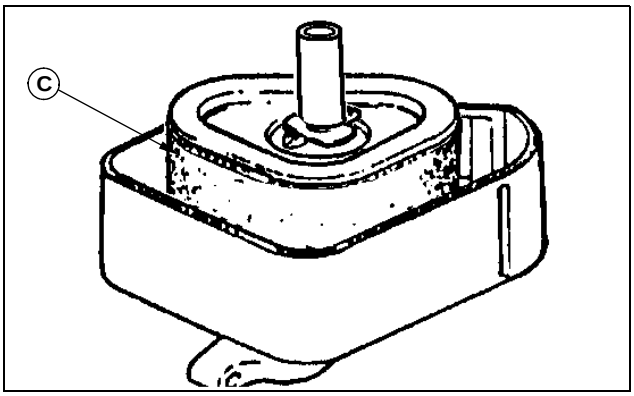
2. Let engine cool.

3. Lift hood.

4. Clean dirt and debris from the air cleaner cover.



5. Loosen knob (A) to remove air cleaner cover (B).

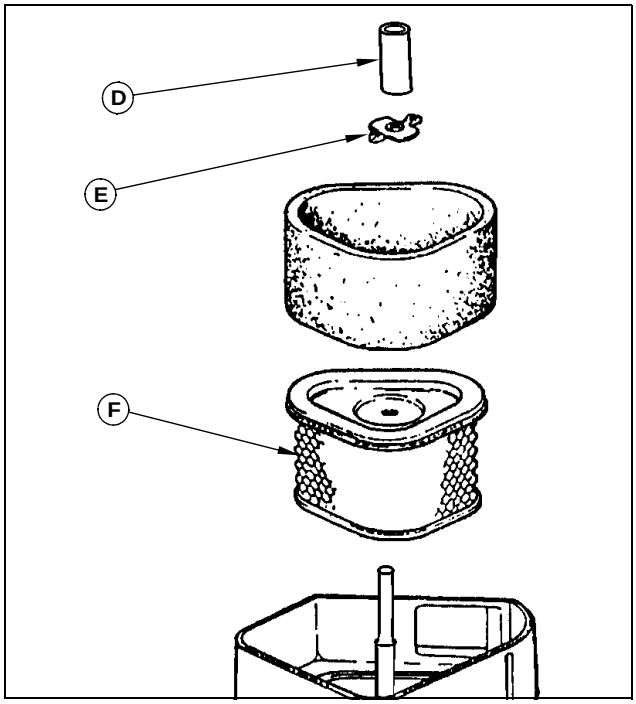


6. Inspect the foam precleaner without removing it. If the foam precleaner (C) is dirty:

- Remove it from the filter carefully, leaving the paper element in the air cleaner housing.
- Wash precleaner in a solution of warm water and liquid detergent.
- Rinse precleaner thoroughly. Squeeze out excess water in a dry cloth until precleaner is completely dry.
- Put approximately 30 ml. (1 oz.) of clean engine oil onto the precleaner. Squeeze precleaner to distribute the oil evenly. Squeeze out excess oil with a clean cloth.

IMPORTANT: Avoid damage! Dirt and debris can enter the engine through a damaged filter element:

- **DO NOT wash paper element.**
- **DO NOT attempt to clean paper element by tapping against another object.**
- **DO NOT use pressurized air to clean element.**
- **Replace element ONLY if it is very dirty, damaged or the seal is cracked.**



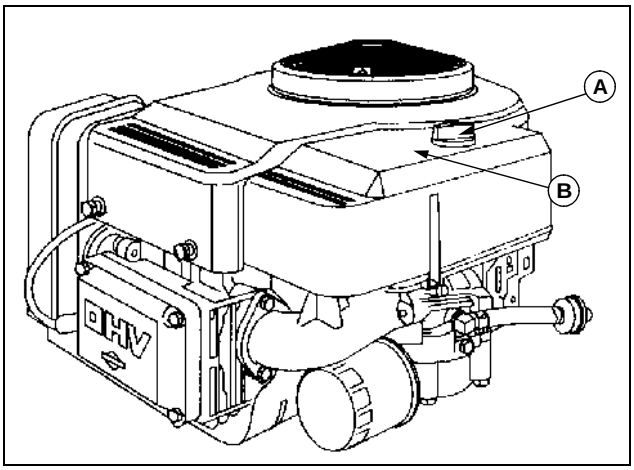
7. Inspect the paper element without removing it. If the paper element (F) is damaged dirty:
   - Remove rubber tube sleeve (D) and wing nut (E).
   - Carefully remove the element from the air cleaner housing. Replace with a new element.
8. Clean air cleaner base very carefully, preventing any dirt from falling into carburetor.
9. Install foam precleaner onto paper element and install into air cleaner base.
10. Install and tighten wing nut.
11. Install rubber tube sleeve on post. Then push it down tight against wing nut.
12. Install air cleaner cover and tighten knob. DO NOT overtighten.

Checking and Cleaning Air Cleaner Elements (Model S1742)

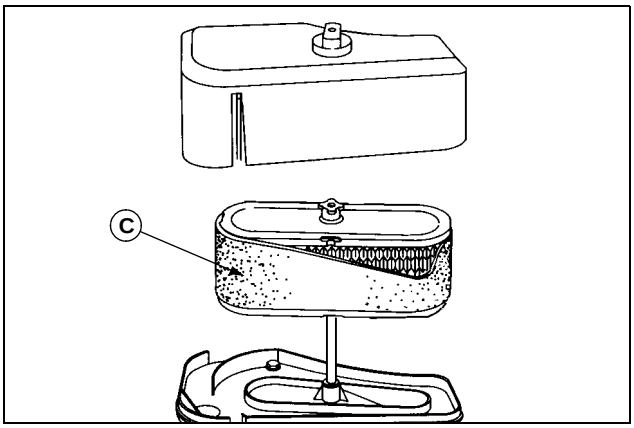
1. Park machine safely. (See Parking Safely in the Safety Section.)

CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine and components will be hot if the engine has been running. Allow the engine to cool before servicing.

2. Let engine cool.
3. Lift hood.
4. Clean dirt and debris from the air cleaner cover.



5. Loosen knob (A) to remove air cleaner cover (B).

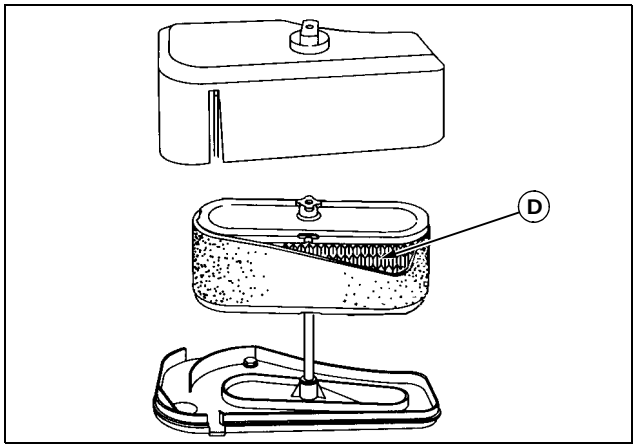


6. Inspect the foam precleaner without removing it. If the foam precleaner (C) is dirty:
   - Remove it from the filter carefully, leaving the paper element in the air cleaner housing.
   - Wash precleaner in a solution of warm water and liquid detergent.
   - Rinse precleaner thoroughly. Squeeze out excess water in a dry cloth until precleaner is completely dry.

- Put approximately 30 ml. (1 oz.) of clean engine oil onto the precleaner. Squeeze precleaner to distribute the oil evenly. Squeeze out excess oil with a clean cloth.

IMPORTANT: Avoid damage! Dirt and debris can enter the engine through a damaged filter element:

- **DO NOT wash paper element.**
- **DO NOT attempt to clean paper element by tapping against another object.**
- **DO NOT use pressurized air to clean element.**
- **Replace element ONLY if it is very dirty, damaged or the seal is cracked.**



7. Inspect the paper element without removing it. If the paper element (D) is damaged or very dirty:

   - Carefully remove the element from the air cleaner housing. Replace with a new element.

8. Clean air cleaner base very carefully, preventing any dirt from falling into carburetor.

9. Install foam precleaner onto paper element and install into air cleaner base.

10. Install air cleaner cover and tighten knob. DO NOT overtighten.

Checking and Cleaning Air Cleaner Elements (Model 2046)

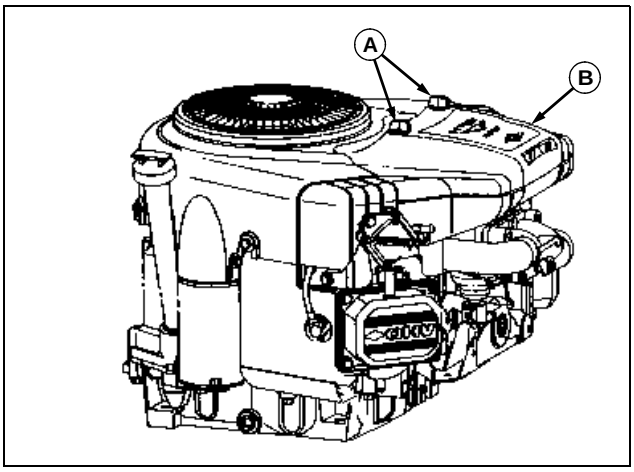
1. Park machine safely. (See Parking Safely in the Safety Section.)

CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine and components will be hot if the engine has been running. Allow the engine to cool before servicing.

2. Let engine cool.

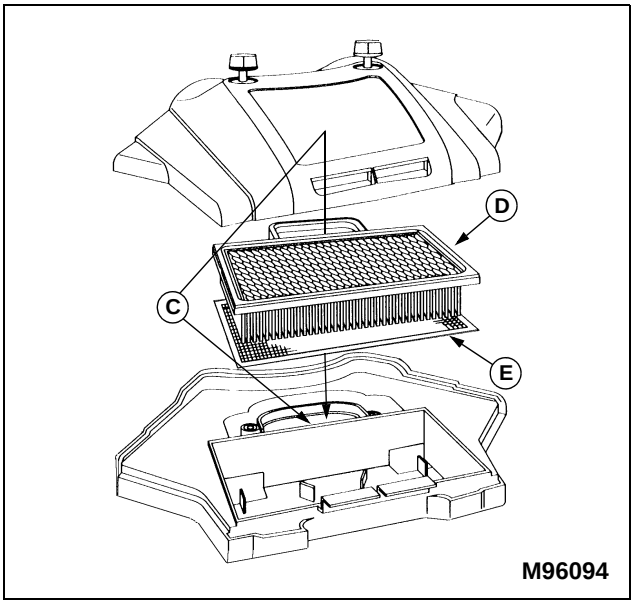
3. Lift hood.

4. Clean dirt and debris from the air cleaner cover.



5. Loosen knobs (A) and remove cover (B).

IMPORTANT: Avoid damage! To prevent engine damage, DO NOT allow any foreign objects to fall into the carburetor air intake (C).



6. Do not drop anything into the carburetor air intake (C). If anything falls into the carburetor air intake it must be removed.

7. Lift out filter cartridge (D) and foam precleaner (E).

8. Inspect the foam precleaner. If the foam precleaner (C) is dirty:

   - Remove it from the filter carefully, leaving the paper element in the air cleaner housing.
   - Wash precleaner in a solution of warm water and liquid detergent.

- Rinse precleaner thoroughly. Squeeze out excess water in a dry cloth until precleaner is completely dry.
- Put approximately 30 ml. (1 oz.) of clean engine oil onto the precleaner. Squeeze precleaner to distribute the oil evenly. Squeeze out excess oil with a clean cloth.

IMPORTANT: Avoid damage! Dirt and debris can enter the engine through a damaged filter element:

- **DO NOT wash paper element.**
- **DO NOT attempt to clean paper element by tapping against another object.**
- **DO NOT use pressurized air to clean element.**
- **Replace element ONLY if it is very dirty, damaged or the seal is cracked.**

9. Inspect cartridge for damage or excessive dirt. Replace if necessary.

10. Clean air cleaner housing carefully. Prevent any dirt from falling into carburetor.

11.Install foam precleaner mesh side up.

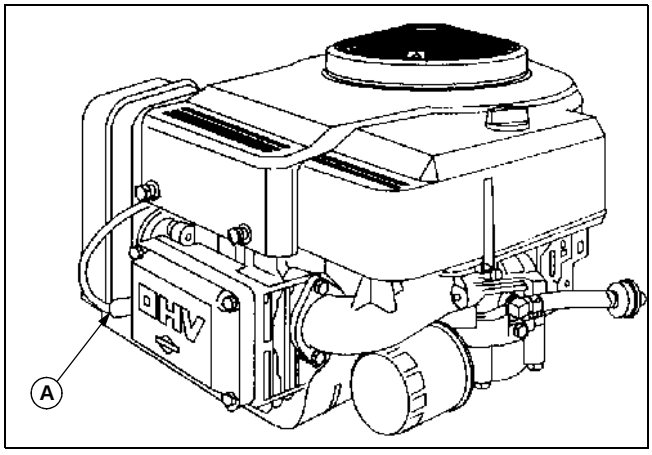
12.Install cartridge. Make sure cartridge and seal are properly seated and sealing the carburetor air intake area.

13.Install air cleaner cover and tighten knobs. DO NOT overtighten.

Checking Spark Plugs

CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine and components will be hot if the engine has been running. Allow the engine to cool before servicing.

1. Park machine safely, (See Parking Safely in the Safety Section), and lift hood.



2. Disconnect spark plug wire(s) (A).

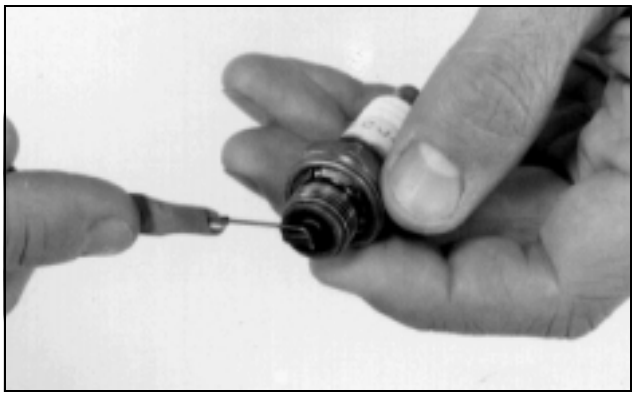
3. Remove spark plugs.

4. Clean spark plugs carefully with a wire brush.

5. Inspect spark plugs for:
   - Cracked porcelain.
   - Pitted or damaged electrodes.
   - Other wear or damage.

NOTE: In Canada, replace spark plug with resistor plug only.

6. Replace spark plug(s) as necessary.



7. Check plug gap with a wire feeler gauge. To change gap, move the outer electrode.
   - Model S1642: Gap must be 1 mm (0.040 in).
   - Models S1742 and S2046: Gap must be 0.76 mm (0.030 in).

8. Install and tighten spark plugs to 20 N•m (15 lb-ft).

9. Connect spark plug wires and lower hood.

Adjusting Carburetor

NOTE: Carburetor is calibrated by the engine manufacturer and is not adjustable.

If engine is operated at altitudes above 1829 m (6,000 ft), some carburetors may require a special high altitude main jet. See your John Deere dealer.

If engine is hard to start or runs rough, check the troubleshooting section of this manual.

Possible engine surging will occur at high throttle with transmission in “N” neutral and mower engagement lever disengaged. This is a normal condition due to the emission control system.

After performing the checks in the troubleshooting section and your engine is still not performing correctly, contact your John Deere dealer.

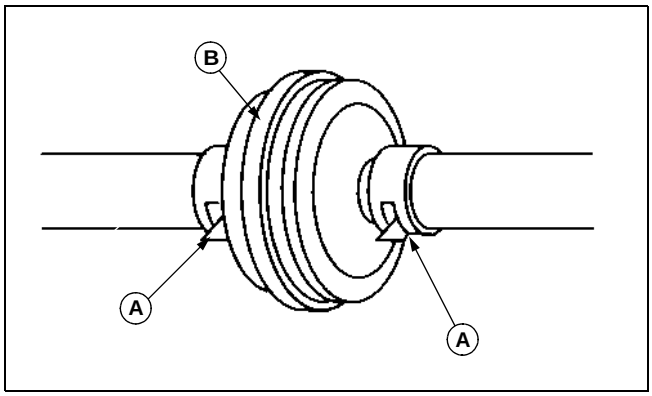
Replacing Fuel Filter

CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

- **DO NOT smoke while handling fuel.**
- **Keep fuel away from flames or sparks.**
- **Shut off engine before servicing.**
- **Cool engine before servicing.**
- **Work in a well-ventilated area.**
- **Clean up spilled fuel immediately.**

NOTE: Change filter when fuel is low.

1. Park machine safely. (See Parking Safely in the Safety Section.)
2. Let engine cool.
3. Put a drain pan under fuel filter.



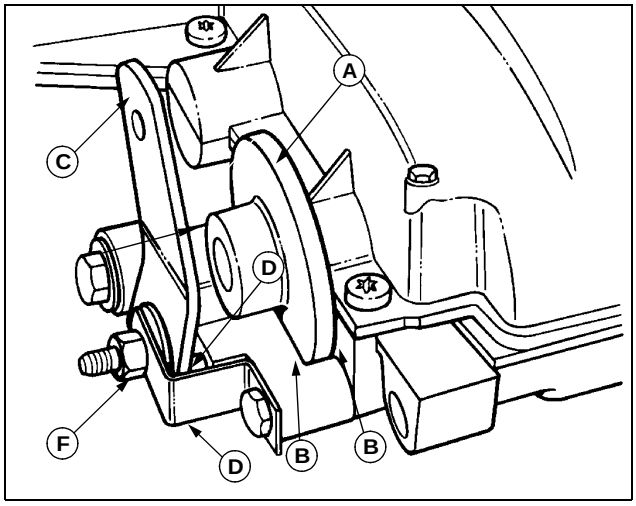
4. Slide hose clamps (A) away from fuel filter (B) using a pliers.
5. Disconnect hoses from filter.
6. Connect hoses to new filter.
7. Install clamps and check for leaks.

Adjusting Brakes (Gear)

CAUTION: Avoid injury! Rotating blades are dangerous. Stop engine, remove key, wait for all moving parts to stop before servicing machine.

1. Park machine safely. (See Parking Safely in the Safety Section.)

2. Check if:



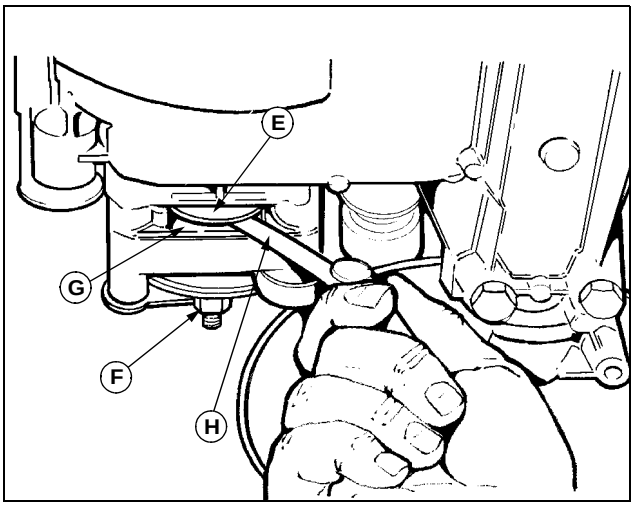
- Brake disc (A) is contacting the case (B),

AND/OR

- Brake lever (C) is contacting its mounting bracket (D), top or bottom.

If so, REPLACE friction pucks and brake disc BEFORE making adjustment. (See you Authorized Service Center.)

3. Block the front and rear wheels, and release the parking brake.



4. From the rear of the tractor, locate the brake disc (E), lock nut (F), and friction puck (G).

5. Insert a 0.25 mm (0.010 in.) shim gauge (H) between the disc and friction puck. The shim should slide with slight interference.

IF THE SHIM WILL NOT FIT:

- Loosen lock nut (F) until the shim slides in. Tighten the lock nut until the shim has slight interference.

- Remove the shim and cycle the brake pedal. Readjust if needed.

IF THE SHIM SLIDES FREELY:

- Install the shim and tighten lock nut (F) until there is slight interference.

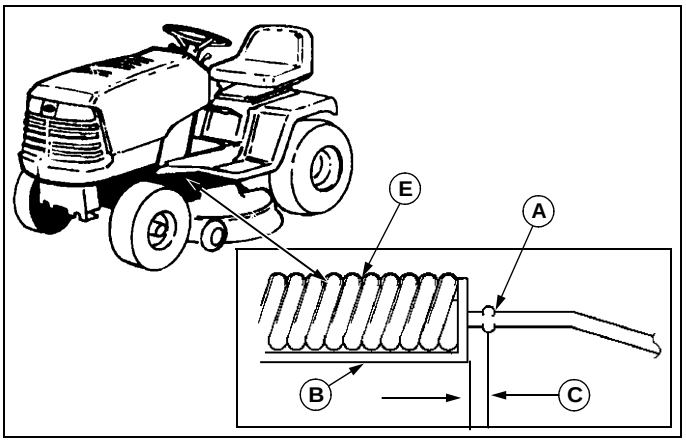
- Remove the shim and cycle the brake pedal. Readjust if needed.

Adjusting Brakes (Automatic Hand Control)

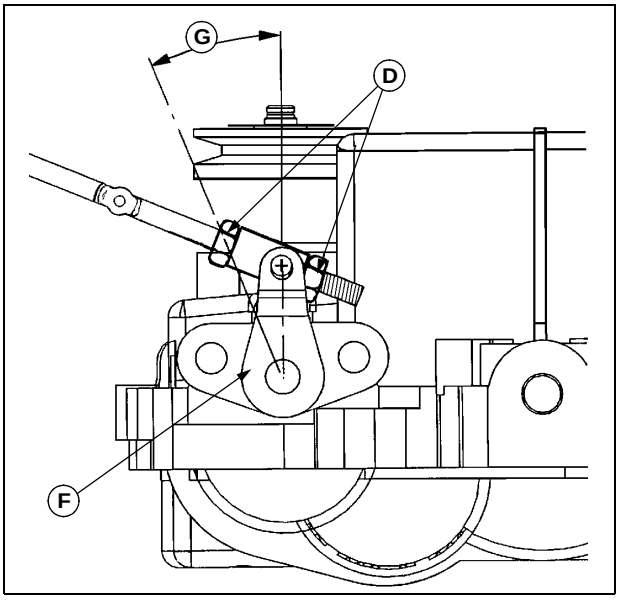
CAUTION: Avoid injury! Rotating blades are dangerous. Stop engine, remove key, wait for all moving parts to stop before servicing machine.

1. Park machine safely. (See Parking Safely in the Safety Section.)

2. Unlock the park brake and release brake pedal.



3. Measure distance from inside of brake rod stop tabs (A) to outside of compression spring bracket (B) (located below foot tread area on left-hand side of transmission). Distance (C) should be 2 – 10 mm (0.08 – 0.40 in).



4. If distance is less than or equal to 2 mm (0.08 in):

- Gradually adjust jam nuts (D) until specified measurement is obtained.
- Depress brake pedal and LOCK park brake.
- Measure the distance between edge of compression spring bracket and front edge of brake rod stop tabs. Gap should have a minimum distance of 2 mm (0.08 in).
- Check brake rod compression spring (E). It should not be completely compressed when park brake is locked. A slight air gap should be visible between the coils when proper adjustment is reached.
- Recycle park brake a few times and measure distances each time until specified measurements are obtained.
- Brake lever (F) travel should not exceed 30° (G). If it does, measure brake components individually.

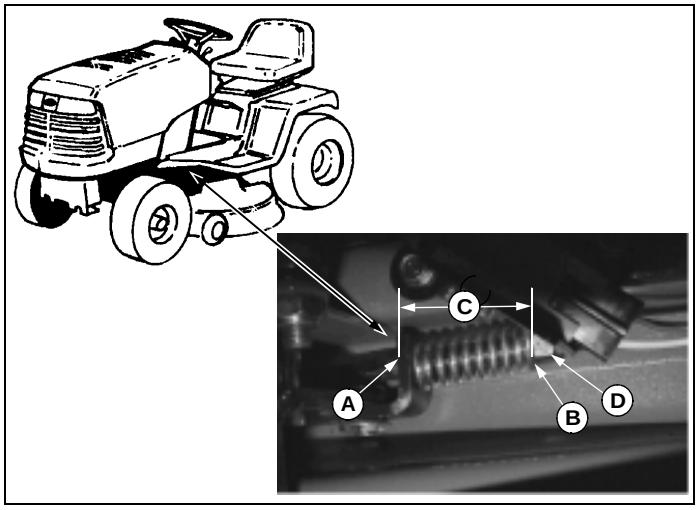
SPECIFICATIONS:

- Spring bracket to stop tabs (minimum): 2 mm (0.08 in)
- Brake lever travel (maximum): 30°

Adjusting Brakes (Automatic Foot Control)

CAUTION: Avoid injury! Rotating blades are dangerous. Stop engine, remove key, wait for all moving parts to stop before servicing machine.

1. Park machine safely. (See Parking Safely in the Safety Section.)



2. Measure distance of the compressed brake spring from bracket (A) to washer (B) (located below foot tread area on left-hand side of transmission). Distance (C) should be 42-43 mm (1.65 - 1.69 in).

If distance (C) is greater than 43 mm (1.69 in) or less than 42 mm (1.65 in), gradually adjust nut (D) until specified measurement is achieved.

Removing Mower

1. Park machine safely. (See Parking Safely in Safety Section.) Disengage mower blades and wait for all moving parts to stop.

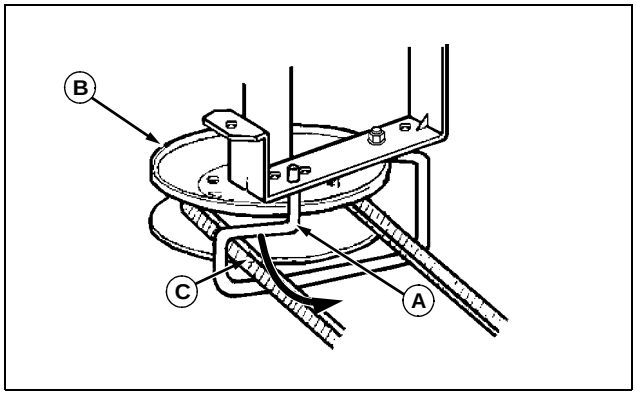
CAUTION: Avoid injury! Rotating blades are dangerous. Before adjusting or servicing mower:

- **Disconnect spark plug wire(s) to prevent engine from starting accidently.**
- **Always wear gloves when handling mower blades or working near blades.**

2. Put lift lever in highest position.

3. Put wood blocks under each side of mower.

4. Put lift lever in lowest position, bringing deck down onto blocks.



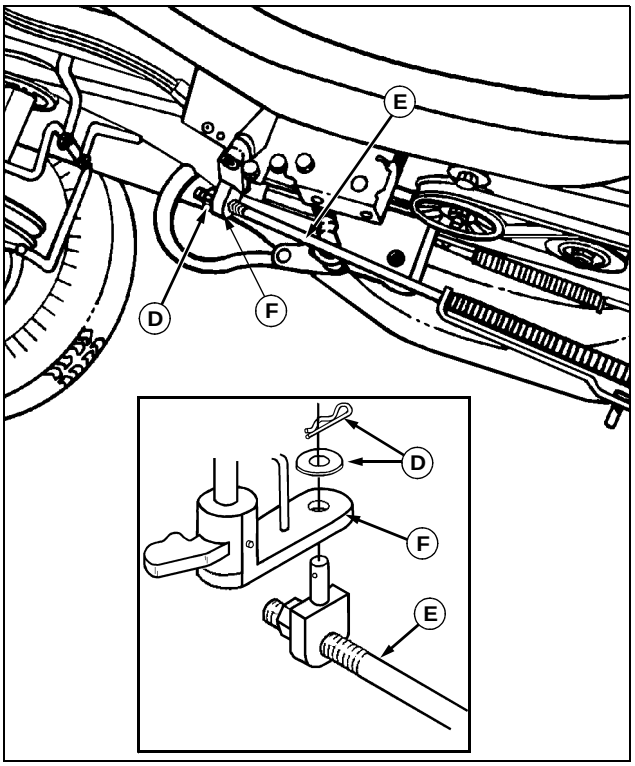
Picture Note: Shown from behind L.H. front wheel.

5. Remove belt from engine drive sheave and belt guides:

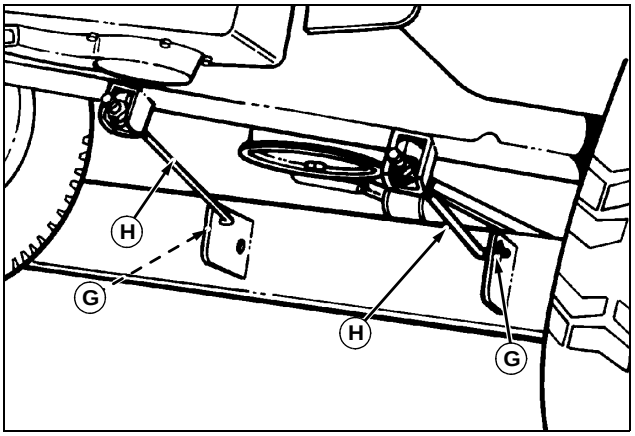
   a. Pull down on left-hand side of belt guide (A) and rotate away from engine pulley (B).

   b. Remove belt (C) from belt guide and pulley.

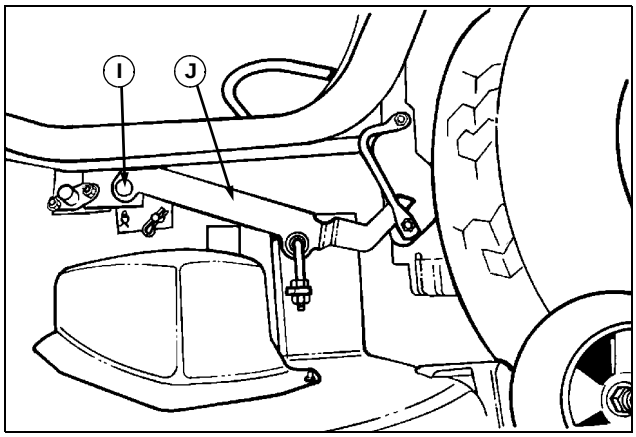
   c. Return guide to original position. Insure that the guide is seated into the hole.



6. Remove spring locking pin and washer (D) holding tension rod (E) to blade drive arm (F).



7. Remove spring locking pins and washers (G) from front draft rods (H) and remove draft arms from front axle brackets. Store draft arms with mower.



8. Remove spring locking pins and rear draft pins (I), one on each side, from rear draft brackets (J).

CAUTION: Avoid injury! Lift lever is under tension and can snap back when deck is removed.

Hold lift lever tightly when releasing from lock (lower) position.

9. Move lift lever to the highest position.

10. Slide mower out from under the tractor.

Installing Mower

1. Park machine safely. (See Parking Safely in Safety Section.)

2. Put lift lever in highest position.

CAUTION: Avoid injury! Rotating blades are dangerous. Before adjusting or servicing mower:

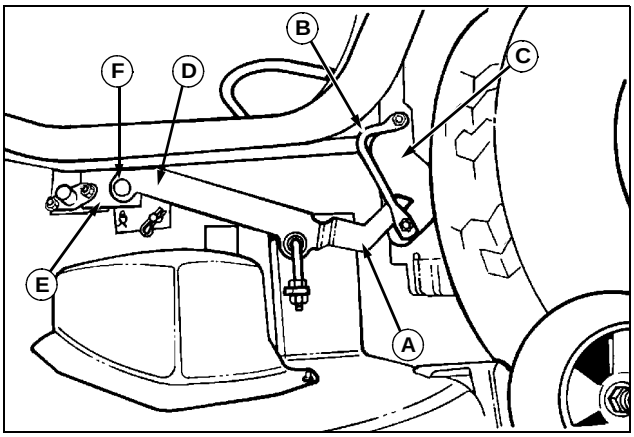
- **Disconnect spark plug wire(s) to prevent engine from starting accidently.**
- **Always wear gloves when handling mower blades or working near blades.**

3. Slide mower under tractor.

CAUTION: Avoid injury! Lift lever is under tension and can snap back when deck is removed.

Hold lift lever tightly when releasing from lock (lower) position.

4. Put lift lever in lowest position.

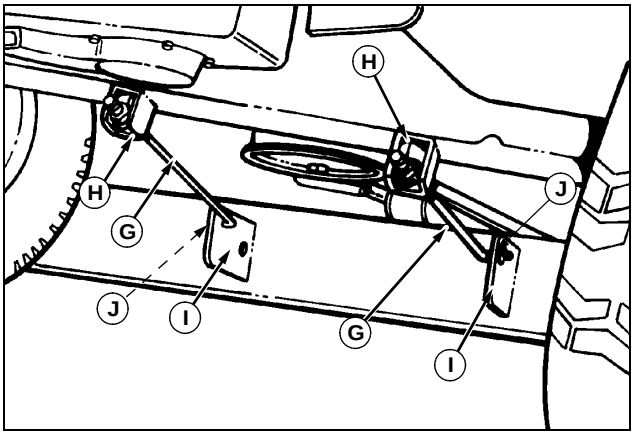


Picture Note: Left side of tractor shown.

5. Position the deck so the rear draft arms (A) are between the guide rods (B) and the lift arms (C).

6. Lift the mower deck. Place wood blocks under each side of mower deck and align the holes in the front of the rear draft brackets (D) with the holes in the frame bracket (E).

7. Insert rear draft pins (F) through rear draft arms and frame bracket from the outboard side. Secure with spring locking pins.



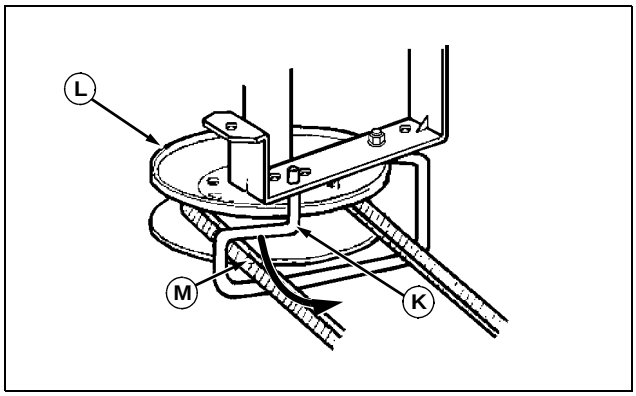
Picture Note: Front of left hand front wheel shown.

8. Insert angled end of front draft rod assemblies (G) through holes in front axle brackets (H).

NOTE: The draft rod assemblies are inserted from the inside of the mower deck brackets toward the outside of the bracket.

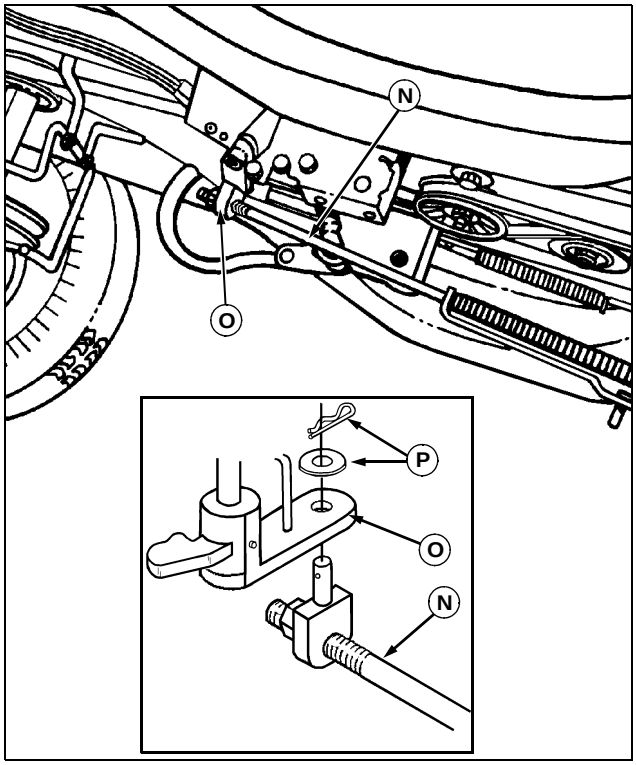
9. Raise front of deck and block. Insert angled end of front draft rods into forward holes on the front brackets (I) of the mower deck.

10. Secure each draft rod with flat washer and spring locking pin (J).



Picture Note: Shown from behind L.H. front wheel.

11.Pull down on left-hand side of belt guide (K) and rotate away from engine pulley (L). Install belt (M) through belt guide and onto pulley. Return guide to original position. Insure that the guide is seated into the hole.



12.Raise tension rod (N) and attach to blade drive arm (O) using flat washer and spring locking pin (P).

13.Raise deck by pressing the lift lever lock and pulling the mower deck lift lever to its highest point.

14.Remove wood blocks from under deck.

15.Check for proper routing and position of all belts.

16.Level mower.

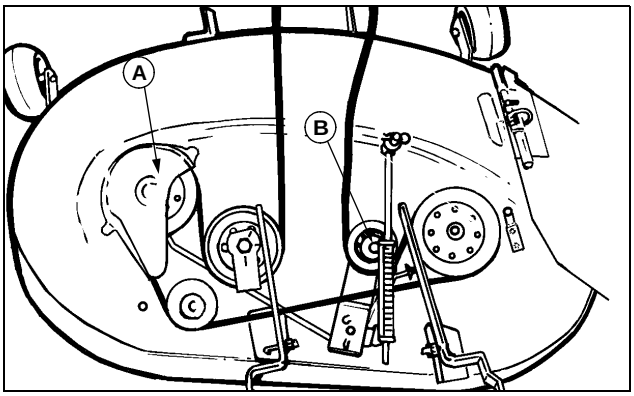
Replacing Mower Drive Belt

CAUTION: Avoid injury! Rotating blades are dangerous. Before adjusting or servicing mower:

- **Disconnect spark plug wire(s) to prevent engine from starting accidently.**
- **Always wear gloves when handling mower blades or working near blades.**

1. Park machine safely. (See Parking Safely in Safety Section.) Disengage mower blades and wait for all moving parts to stop.
2. Remove mower deck.
3. Remove drive belt.

42-Inch Mower Deck:



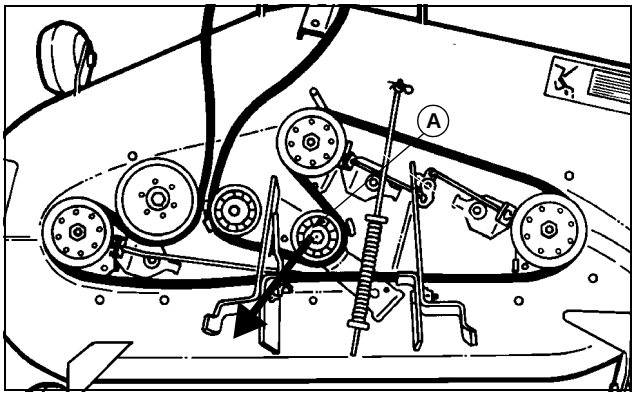
a. Remove two capscrews and belt guard (A).

b. Loosen pulley (B) and move pulley to the right.

c. Remove mower belt.

46-Inch Mower Deck:

a. Remove six capscrews and left and right belt guards.



b. Pull pulley (A) to the left and remove mower drive belt from engine pulley.

c. Remove mower belt.

4. Inspect belt for wear or damage; replace as necessary.

5. Install belt in reverse order of removal.

6. Reinstall belt guard(s) and tighten capscrews securely.

7. Install mower deck and adjust mower belt tension, if necessary.

Adjusting Mower Belt Tension

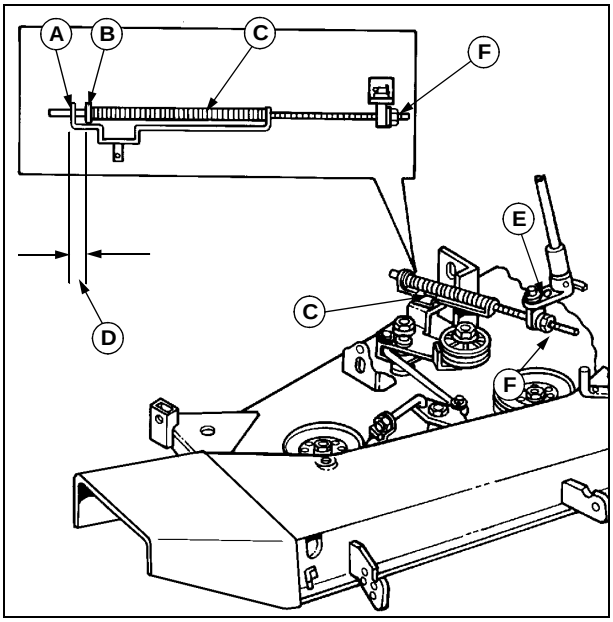
CAUTION: Avoid injury! Rotating blades are dangerous. Stop engine, remove key, wait for all moving parts to stop before servicing machine.

IMPORTANT: Avoid damage! Spindle brake engagement must be checked every time the mower belt tension is adjusted or belt damage may occur.

1. Park machine safely. (See Parking Safely in the Safety Section.)

2. Place mower deck in lowest setting.

3. Engage PTO drive lever.



4. Measure distance from bracket (A) to washer (B) on tension rod (C).

- Distance (D) should be: 20 - 25 mm (0.78 - 0.98 in)

5. Continue with the following steps, if adjustment is required.

6. Disengage PTO lever.

CAUTION: Avoid injury! Spring is under tension. Do not remove tensioning spring when adjusting mower belt tension.

7. Remove spring locking pin and washer (E) and disconnect tension rod from blade drive arm.

8. Loosen lock nut (F).

9. Turn fitting on tension rod clockwise to shorten and counterclockwise to lengthen effective rod length.

10. Tighten lock nut (F) to 27 N•m (20 lb-ft.).

11. Assemble tension rod and recheck dimension (D).

12. Check spindle brake clearance.

Adjusting Spindle Brake

CAUTION: Avoid injury! Rotating blades are dangerous. Mower blades must stop within 5 seconds after mower is turned off. Check spindle brake measurement every 25 hours or once a year (whichever comes first).

IMPORTANT: Avoid damage! Avoid belt damage.

Spindle brake engagement must be checked and corrected every time the mower belt tension is adjusted.

Mower belt tension should be adjusted, if required, BEFORE brakes are adjusted.

1. Park machine safely. (See Parking Safely in the Safety Section.)

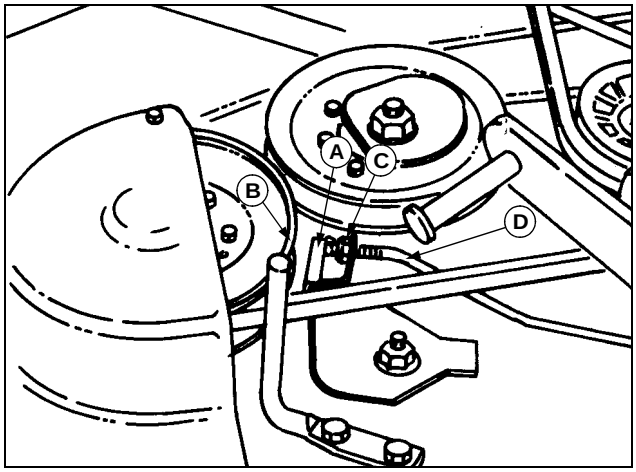
2. Place mower deck in lowest setting.

3. Engage PTO drive lever.

4. Check mower belt tension and adjust, if necessary.

5. Remove belt guard.

IMPORTANT: Avoid damage! ALL brakes MUST be adjusted. There are TWO spindle brakes on the 42-Inch deck, and THREE spindle brakes on the 46-Inch deck.



6. Measure distance from brake surface (A) to pulley braking surface (B). Brake to Pulley Distance should be: 2 – 3 mm (0.08 – 0.12 in).

7. If adjustment is required, turn nut (C) on end of brake rod (D) in correct direction to set brake at proper distance from pulley.

8. Repeat on all brakes.

9. Install belt guard.

Checking for Bent Mower Blades

CAUTION: Avoid injury! Mower blades are sharp. Always wear gloves when handling mower blades or working near blades.

1. Park machine safely. (See Parking Safely in the Safety Section).

2. Put lift lever in mowing position.

3. Measure distance between blade tip and flat ground surface.

4. Turn blade. Measure distance between other blade tip and flat ground surface.

5. Install new blade, if the difference between the two measurements is more than 3 mm (1/8 in).

Servicing Mower Blades (42-Inch Deck)

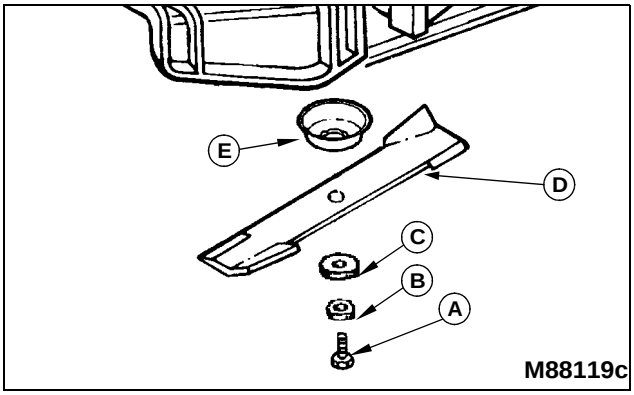
CAUTION: Avoid injury! Mower blades are sharp. Always wear gloves when handling mower blades or working near blades.

Removing Mower Blades

1. Raise mower deck to gain access to mower blades. If necessary, remove mower deck.

2. Block mower blade with a piece of wood to prevent it from spinning.

NOTE: Before removing hardware, note the orientation of the cupped blade washer (C) to ensure proper installation.

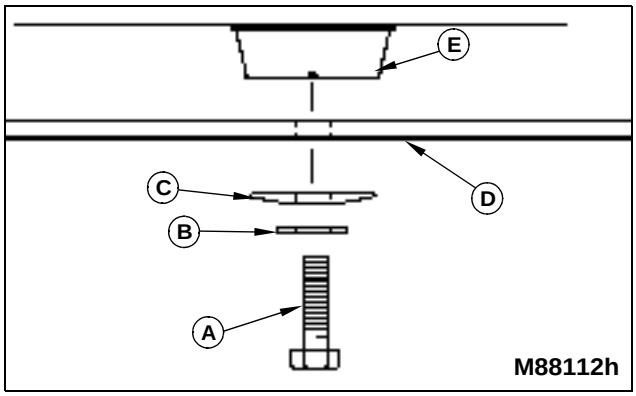


3. Loosen and remove cap screw (A), hardened washer (B), cupped blade washer (C), blade (D) and deflector cup (E).

4. Inspect blades; sharpen, balance or replace blades as necessary.

Installing Mower Blades

1. Lubricate cap screw threads lightly with a general purpose grease or oil. This lubrication is to prevent rusting and seizing.



2. Install deflector cup (E) on spindle.

3. Position mower blade (D) with the cutting edge towards the ground onto the mower spindle.

4. Install cupped blade washer (C) with cup side toward the blade.

5. Install hardened washer (B).

6. Install and hand tighten cap screw (A) until mower blade is in full contact (fully seated) with spindle.

7. Block mower blade with a piece of wood to prevent spinning and tighten cap screws to 56 N•m (41 lb-ft).

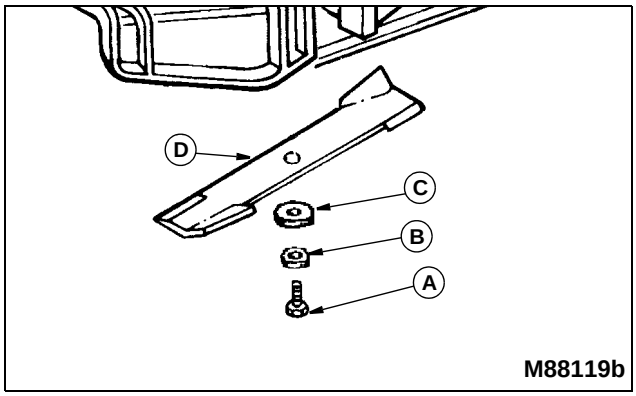
Servicing Mower Blades (46-Inch Deck)

CAUTION: Avoid injury! Mower blades are sharp. Always wear gloves when handling mower blades or working near blades.

Removing Mower Blades

1. Raise mower deck to gain access to mower blades. If necessary, remove mower deck.

2. Block mower blade with a piece of wood to prevent it from spinning.

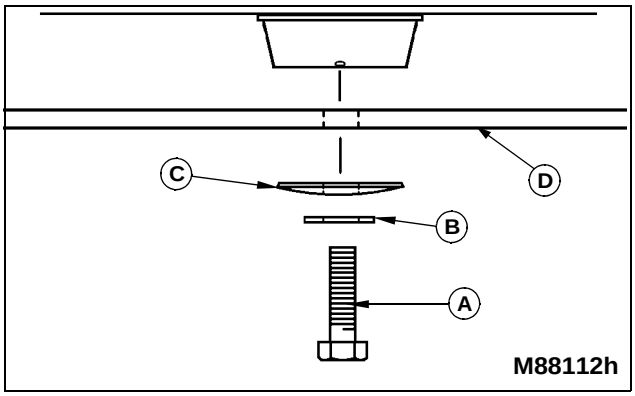


3. Loosen and remove cap screw (A), hardened washer (B), cupped blade washer (C) and blade (D).

4. Inspect blades; sharpen, balance or replace blades as necessary.

Installing Mower Blades

1. Lubricate cap screw threads lightly with a general purpose grease or oil. This lubrication is to prevent rusting and seizing.



2. Position mower blade (D) with the cutting edge towards the ground onto the mower spindle.

3. Install cupped blade washer (C) with cup side toward the blade and mark on bottom of washer pointing toward the cap screw.

4. Install hardened washer (B).

5. Install and hand tighten cap screw (A) until mower blade is in full contact (fully seated) with spindle.

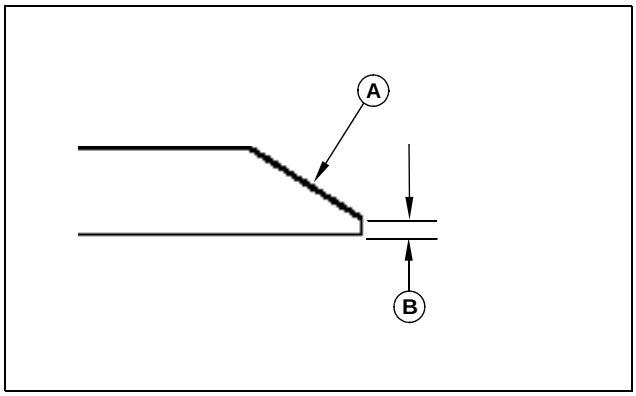
6. Block mower blade with a piece of wood to prevent spinning and tighten cap screws to 56 N•m (41 lb-ft).

Sharpening Blades

CAUTION: Avoid injury! Mower blades are dangerous!

- **Always wear gloves while working on blades.**
- **Always wear safety eye protection when grinding.**

Sharpen blades with grinder, hand file, or electric blade sharpener.



Keep original bevel (A) when grinding.

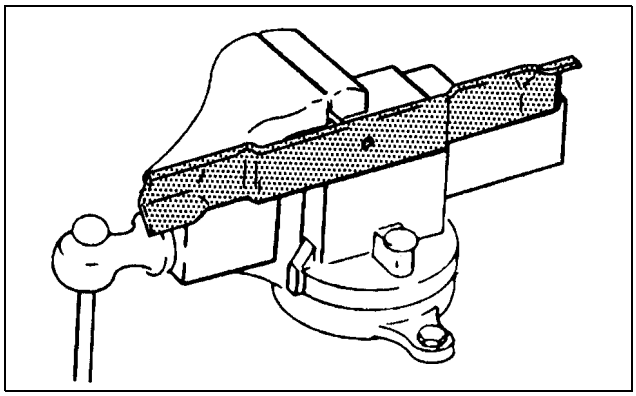
Blade should have 0.40 mm (1/64 in.) cutting edge (B) or less.

Balance blades before installing.

Balancing Blades

CAUTION: Avoid injury! Mower blades are sharp. Always wear gloves when handling mower blades or working near blades.

1. Clean blade.



2. Put blade on nail in a vise. Turn blade to horizontal position.

3. Check balance. If blade is not balanced, heavy end of blade will drop.

4. Grind bevel of heavy end. Do not change blade bevel.

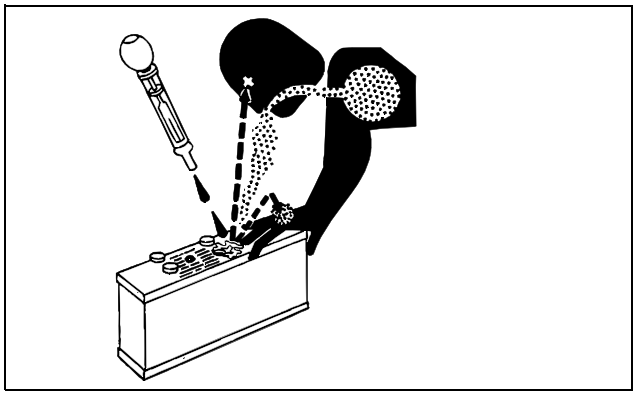
WARNING: Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

Checking the Battery

CAUTION: Avoid injury! DO NOT attempt to open, add fluid or service battery. Any attempt to do so will void warranty and lead to possible injury.

Battery electrolyte contains sulfuric acid. It is poisonous and can cause serious burns:

- **Wear eye protection and gloves.**
- **Keep skin protected.**
- **If electrolyte is swallowed, get medical attention immediately.**
- **If electrolyte is splashed into eyes, flush immediately with water for 15-30 minutes and get medical attention.**
- **If electrolyte is splashed onto skin, flush immediately with water and get medical attention if necessary.**



•Keep battery and terminals clean.

•Keep battery bolts tight.

•Keep small vent holes open.

IMPORTANT: Avoid damage! This battery comes fully charged. If the mower is not used by the Service Expiration Date indicated on the battery, charge the battery.

•Recharge, if necessary, at 6–10 amperes for 1 hour.

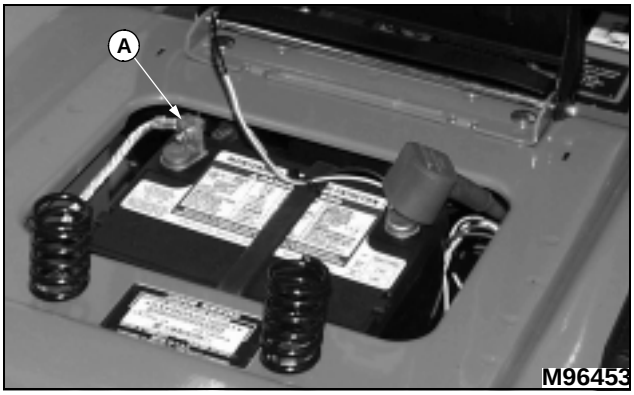
Removing and Installing the Battery

CAUTION: Avoid injury! The battery produces a flammable and explosive gas. The battery may explode:

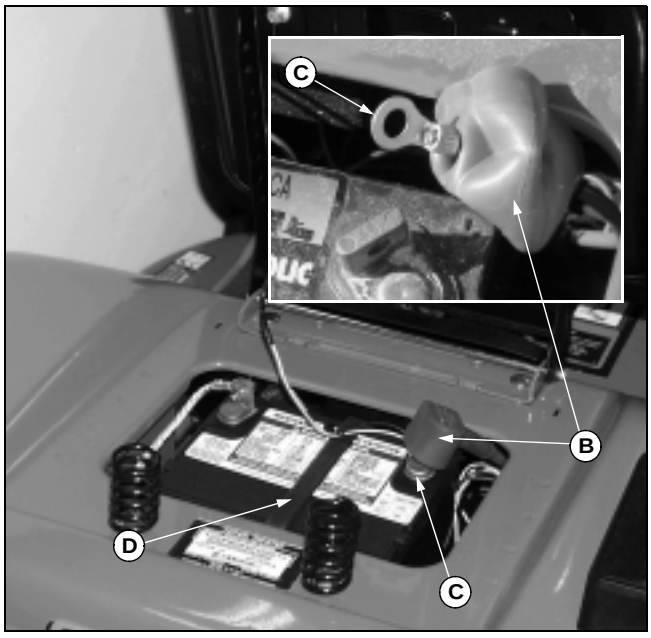
- **DO NOT smoke near battery.**
- **Wear eye protection and gloves.**
- **DO NOT allow direct metal contact across battery posts.**
- **Remove negative cable first when disconnecting.**
- **Install negative cable last when connecting.**

Removing:

1. Park machine safely, (See Parking Safely in the Safety Section), and lift seat.



2. Disconnect negative (–) battery cable (A).



3. Pull back the red terminal cover (B) and disconnect

positive (+) cable (C) from battery.

4. Remove black rubber strap (D).

5. Remove battery.

Installing:

Install the battery following the removal steps in reverse order.

Clean Battery and Terminals

CAUTION: Avoid injury! The battery produces a flammable and explosive gas. The battery may explode:

- **Do not smoke near battery.**
- **Wear eye protection and gloves.**
- **Do not allow direct metal contact across battery posts.**
- **Remove negative cable first when disconnecting.**
- **Install negative cable last when connecting.**

1. Disconnect and remove battery.

2. Wash battery with solution of four tablespoons of baking soda to one gallon of water. Be careful not to get the soda solution into the cells.

3. Rinse the battery with plain water and dry.

4. Clean terminals and battery cable ends with wire brush until bright.

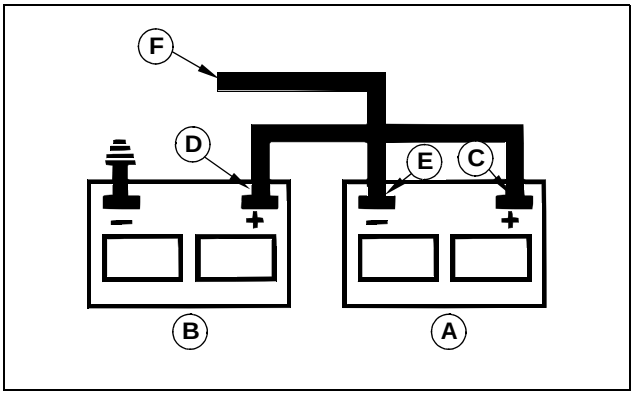
5. Apply petroleum jelly or silicone spray to terminal to prevent corrosion.

6. Install battery.

Using Booster Battery

CAUTION: Avoid injury! The battery produces a flammable and explosive gas. The battery may explode:

- **Do not attempt to jump start a frozen battery. Warm to 16 degrees C (60 degrees F).**
- **Do not smoke near battery.**
- **Wear eye protection and gloves.**
- **Keep sparks and flames away.**
- **Do not connect the negative (-) booster cable to the negative (-) terminal of the discharged battery. Connect at a good ground location away from the discharged battery.**



A - Booster Battery
B - Disabled Vehicle Battery

1. Connect positive (+) booster cable to booster battery (A) positive (+) post (C).

2. Connect the other end of positive (+) booster cable to the disabled vehicle battery (B) positive (+) post (D).

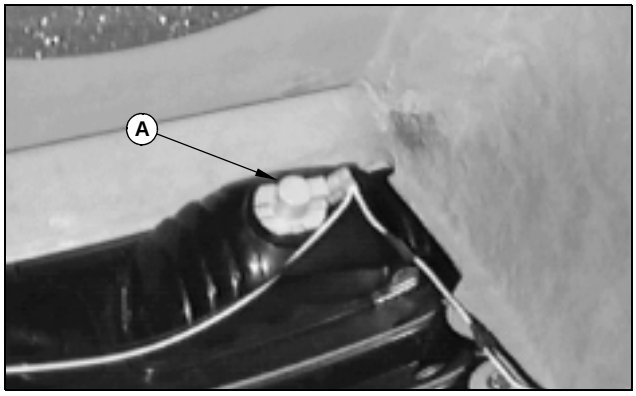
3. Connect negative (–) booster cable to booster battery negative (–) post (E).

4. Connect the other end (F) of negative (–) booster cable to a metal part of the disabled machine frame away from battery.

5. Start the engine of the disabled machine and run machine for several minutes.

6. Carefully disconnect the booster cables in the exact reverse order: negative cable first and then the positive cable.

Replacing Headlight Bulb



1. Turn bulb socket (A) 1/4 turn counterclockwise to remove.
2. Replace defective bulb with a new bulb.
3. Insert bulb socket into housing, push in and turn 1/4 turn clockwise to install.

Replacing Fuse

1. Park machine safely and lift hood. (See Parking Safely in the Safety Section.)
2. Pull defective fuse(s) (A) out of socket(s).
3. Check metal clip in fuse window and discard fuse if clip is broken.
4. Push new 15 Amp fuse into socket.
5. Lower hood.

Filling Fuel Tank

Use regular grade 87 octane unleaded fuel.

Add John Deere fuel stabilizer to fuel before using it in your machine to prevent engine damage due to stale fuel. Follow directions on stabilizer container.

CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

- **Shut engine off before filling fuel tank.**
- **Do not smoke while handling fuel.**
- **Keep fuel away from flames or sparks**
- **Fill fuel tank outdoors or in well ventilated area.**
- **Clean up spilled fuel immediately.**
- **Use clean approved non-metal container to prevent static electric discharge.**
- **Use clean approved plastic funnel without screen or filter to prevent static electric discharge.**

IMPORTANT: Avoid damage! Dirt and water in fuel can cause engine damage:

- **Clean dirt and debris from the fuel tank opening.**
- **Use clean, fresh, stabilized fuel.**
- **Fill the fuel tank at the end of each day's operation to keep condensation out of the fuel tank.**
- **Use a non-metallic funnel with a plastic mesh strainer when filling the fuel tank or container.**

1. Stop engine, let it cool several minutes before you add fuel.
2. Remove grass clippings and other trash from tank area.
3. Remove fuel tank cap (A).
4. Fill tank with fuel only to bottom of filler neck.
5. Install fuel tank cap.

Cleaning and Repairing Plastic Surfaces

Your John Deere dealer has the professional materials needed to properly remove surface scratches from any plastic surfaces, do not attempt to paint over marks or scratches in plastic parts.

IMPORTANT: Avoid damage! Improper care of machine plastic surfaces can damage that surface:

- **Do not wipe plastic surfaces when they are dry. Dry wiping will result in minor surface scratches.**
- **Use a soft, clean cloth (bath towel, diaper, automotive mitt).**
- **Do not use abrasive materials, such as polishing compounds, on plastic surfaces.**
- **Do not spray insect repellent near machine.**

1. Rinse hood and entire machine with clean water to remove dirt and dust that may scratch the surface.
2. Wash surface with clean water and a mild liquid automotive washing soap.
3. Dry thoroughly to avoid water spots.
4. Wax the surface with a liquid automotive wax. Use products that specifically say "contains no abrasives."

IMPORTANT: Avoid damage! Do not use a power buffer to remove wax.

5. Buff applied wax by hand using a clean, soft cloth.

Cleaning and Repairing Metal Surfaces

Cleaning:

Follow automotive practices to care for your vehicle painted metal surfaces. Use a high-quality automotive wax regularly to maintain the factory look of your vehicle's painted surfaces.

Repairing Minor Scratches (surface scratch):

1. Clean area to be repaired thoroughly.

IMPORTANT: Avoid damage! Do not use rubbing compound on painted surfaces.

2. Use automotive polishing compound to remove surface scratches.
3. Apply wax to entire surface.

Repairing Deep Scratches (bare metal or primer showing):

1. Clean area to be repaired with rubbing alcohol or mineral spirits.
2. Use paint stick with factory-matched colors available from your John Deere dealer to fill scratches. Follow directions included on paint stick for use and for drying.
3. Smooth out surface using an automotive polishing

compound. Do not use power buffer.

4. Apply wax to surface.

Using Troubleshooting Chart

If you are experiencing a problem that is not listed in this chart, see your Authorized Service Center for service.

When you have checked all the possible causes listed and you are still experiencing the problem, see your Authorized Service Center.

Engine

IF	CHECK
Poor Engine Performance	Fuel: • Dirt in fuel system or fuel is old. Replace fuel with fresh stabilized fuel. Obtain fuel from another supplier before suspecting machine problems. Suppliers blend fuels differently and changing suppliers will generally solve any performance problems • Fuel blended with alcohol or ether may contribute to performance problems by causing gum and varnish deposits, especially if fuel is stored for several weeks or more. Obtain fresh fuel.
Engine Will Not Start	Out of fuel. Loose or corroded electrical connections. Mower engagement lever is in ENGAGED position. Fuse is blown. Spark plug wire is loose or disconnected. Brake pedal not depressed. Engine flooded. Dirty air filter. Dirty fuel filter. Improper, stale or dirty fuel. Bad starter solenoid. Carburetor is not adjusted properly or dirty. Engine valves out of adjustment.
Engine Clicks But Will Not Start	Weak or dead battery. Corroded battery terminals. Loose or damaged wiring. Faulty solenoid or starter.

IF	CHECK
Engine Hard To Start	Dirty air filter. Bad spark plug. Weak or dead battery. Dirty fuel filter. Stale or dirty fuel. Loose or damaged wiring. Carburetor is not adjusted properly or dirty. Engine valves out of adjustment. Below 32°F (0°C)
Loss Of Power	Cutting too much grass /too fast. Choke adjusted incorrectly. Buildup of grass, leaves and trash under mower. Dirty air filter. Low oil/dirty oil. Faulty spark plug. Dirty fuel filter. Stale or dirty fuel. Water in fuel. Spark plug wire loose. Dirty engine air screen/fins. Dirty/clogged muffler. Loose or corroded electrical connections. Carburetor is not adjusted properly or dirty.
Engine Continues To Run When Operator Leaves Seat	Faulty operator presence safety switch.
Engine Will Not Turn Over	Clutch/brake pedal not depressed. Attachment clutch is engaged. Weak or dead battery. Blown fuse. Corroded battery terminals. Loose or damaged wiring. Faulty ignition switch. Faulty solenoid or starter. Faulty operator presence safety switch.
Engine Stops When Shift Lever Is Moved Rearward and Mower Is Engaged (Hydrostatic)	Normal condition. (See Using Reverse Implement Option in the OPERATING section.)

IF	CHECK
Engine Stops When Gear Shift Lever Is Moved To The R (REVERSE) Position and Attachment Is Engaged (Gear)	Normal condition. (See Using Reverse Implement Option in the OPERATING section.)

Mower

IF	CHECK
Mower Blades Will Not Rotate	Obstruction in clutch mechanism, or blades. Worn/damaged mower drive belt. Frozen idler pulley. Frozen blade mandrel.
Discharge Chute Plugging	Belt worn or installed incorrectly. Grass too wet. Buildup of grass, leaves and trash under mower. Worn, bent or loose blade. Mower deck not level. Engine rpm too low. Travel speed too fast. Low/uneven tire pressure. Blades improperly installed. Improper blades used.
Patches Of Grass Uncut	Travel speed too fast. Engine rpm too low.
Belt Slipping	Debris in sheaves. Worn belt.
Too Much Vibration	Worn, bent or loose blade(s). Bent blade spindle. Damaged drive belt.
Blades Scalping Grass	Cutting too low. Turning speed too fast. Ridges in terrain. Rough or uneven terrain. Low tire pressure. Mower gauge wheels not adjusted correctly. Bent blade(s).

IF	CHECK
Uneven Cut	Mower not level. Travel speed too fast. Blades dull, bent or loose. Mower gauge wheels not adjusted correctly. Buildup of grass, leaves, and trash under mower. Bent blade spindle.
Grass Tips Are Jagged And Turn Grayish Brown After Mowing	Dull mower blades. Bent blades. Front-to-rear blade adjustment not set properly.
Mower Stops When Shift Lever Is Moved Rearward and Mower Is Engaged (Hydrostatic)	Normal condition. (See Using Reverse Implement Option in the OPERATING section.)
Mower Stops When Gear Shift Lever Is Moved To The R (REVERSE) Position and Mower Is Engaged (Gear)	Normal condition. (See Using Reverse Implement Option in the OPERATING section.)

Electrical

IF	CHECK
Starter Does Not Work Or Will Not Turn Engine	Brake pedal is not depressed. Mower Engagement Lever is in ENGAGED position. Battery terminals are corroded. Battery not charged.
Lights Do Not Work	Loose or burned out bulb.. Loose or damaged wiring. Blown fuse.
Battery Will Not Charge	Dead cell in the battery. Battery cables and terminals are dirty. Faulty regulator/rectifier.

Storing Safety

CAUTION: Avoid injury! Fuel vapors are explosive and flammable. Engine exhaust fumes contain carbon monoxide and can cause serious illness or death:

- **Run the engine only long enough to move the machine to or from storage.**
- **Do not store vehicle with fuel in the tank inside a building where fumes may reach an open flame or spark.**
- **Allow the engine to cool before storing the machine in any enclosure.**

Preparing Machine for Storage

1. Repair any worn or damaged parts. Replace parts if necessary. Tighten loose hardware.
2. Repair scratched or chipped metal surfaces to prevent rust.
3. Clean under the deck and remove grass and debris from inside chute and bagger.
4. Wash the machine and apply wax to metal and plastic surfaces.
5. Run machine for five minutes to dry belts and pulleys.
6. Apply light coat of engine oil to pivot and wear points to prevent rust.
7. Lubricate grease points.
8. Check tire pressure.

Preparing Fuel and Engine For Storage

Fuel:

If you have been using “Stabilized Fuel”, add stabilized fuel to tank until the tank is full.

NOTE: Filling the fuel tank reduces the amount of air in the fuel tank and helps reduce deterioration of fuel.

If you are not using “Stabilized Fuel”:

1. Park machine safely in a well-ventilated area.

NOTE: Try to anticipate the last time the tractor will be used for the season so very little fuel is left in the fuel tank.

2. Turn on engine and allow to run until it runs out of fuel.
3. Turn key to OFF position.

IMPORTANT: Avoid damage! Stale fuel can produce varnish and plug carburetor components and affect engine performance.

- **Add fuel conditioner or stabilizer to fresh fuel before filling tank.**

4. Mix fresh fuel and fuel stabilizer in separate container. Follow stabilizer instructions for mixing.
5. Fill fuel tank with stabilized fuel.
6. Run engine for a few minutes to allow fuel mixture to circulate through carburetor.

Engine:

Engine storage procedure should be used when vehicle is not to be used for longer than 60 days.

1. Change engine oil and filter while engine is warm.
2. Service air filter if necessary.
3. Clean debris from engine air intake screen.
4. Remove spark plugs. Put 30 mL (1 oz.) of clean engine oil in cylinders.
5. Install spark plugs, but DO NOT connect spark plug wires.
6. Crank the engine five or six times to allow oil to be distributed.
7. Clean the engine and engine compartment.
8. Remove battery.
9. Clean the battery and battery posts. Check the electrolyte level.
10. Close fuel shut-off valve, if your machine is equipped.
11. Store the battery in a cool, dry place where it will not freeze.

NOTE: The stored battery should be recharged every 90 days.

12. Charge the battery.
13. Store the vehicle in a dry, protected place. If vehicle is stored outside, put a waterproof cover over it.

Removing Machine From Storage

1. Check tire pressure.
2. Check engine oil level.
3. Check battery electrolyte level. Charge battery if necessary.
4. Install battery.
5. Check spark plug gap. Install and tighten plugs to

specified torque.

6. Lubricate all grease points.

7. Open fuel shut-off valve, if your machine is equipped.

8. Run the engine 5 minutes without the mower or any attachments running to allow oil to be distributed throughout engine.

9. Be sure all shields and guards or deflectors are in place.

SPECIFICATIONS

Model S1642

Engine Manufacturer . . . . . **Kohler**
Horsepower . . . . . **11.9 kW (16 hp)**
Displacement . . . . . **426 cc (26 cu.in.)**
Spark Plug-Gap . . . . . **1.02 mm (0.040 in.)**
Cylinders . . . . . **One**
Oil Filter . . . . . **None**
Air Filter . . . . . **Paper with Foam**
Transmission . . . . . **Hydrostatic**
Transaxle Manufacturer . . . . . **Tuff Torq ™ K51**
Travel Speed - Forward . . . . . **0 - 8.5 km/h (0 - 5.3 mph)**
Travel Speed - Reverse . . . . . **0 - 4.7 km/h (0 - 2.9 mph)**

Model S1742

Engine Manufacturer . . . . . **Briggs & Stratton**
Horsepower . . . . . **12.7 kW (17 hp)**
Displacement . . . . . **465 cc (28.4 cu.in.)**
Spark Plug-Gap . . . . . **0.76 mm (0.030 in.)**
Cylinders . . . . . **One**
Oil Filter . . . . . **Yes**
Air Filter . . . . . **Paper with Foam**
Transmission . . . . . **Gear Transaxle**
Transaxle Manufacturer . . . . . **Dana**
Travel Speeds **5**

Gear Speed Range

1st . . . . . **2.4 km/h (1.5 mph)**
2nd . . . . . **3.2 km/h (2.0 mph)**
3rd . . . . . **5.0 km/h (3.1 mph)**
4th . . . . . **6.4 km/h (4.0 mph)**
5th . . . . . **8.0 km/h (5.0 mph)**
Gear Speed - Reverse . . . . . **3.7 km/h (2.3 mph)**

Model S2046

Engine . . . . . **Manufacturer Briggs & Stratton**
Horsepower (SAE1349) . . . . . **14.9 kW (20 hp)**
Displacement . . . . . **656 cc (40.0 cu.in.)**
Spark Plug-Gap . . . . . **0.76 mm (0.030 in.)**
Cylinders . . . . . **Two**

Oil Filter	**Yes**
Air Filter	**Dry, Replaceable Foam**
Transmission	**Hydrostatic**
Transaxle Manufacturer	**Tuff Torq™ K51**
Travel Speed - Forward	**0 - 8.5 km/h (0 - 5.3 mph)**
Travel Speed - Reverse	**0 - 4.7 km/h (0 - 2.9 mph)**

Electrical System (All Models)

Charging System	**Dual Circuit AC/DC**
Charging System Capacity	**2-4 Amp**
Battery Voltage	**12 Volts**
Battery Type	**BCI Group U1**
Battery CCA	**190 Amp**

Capacities

Models S1642 and S2046

Crankcase without oil filter	**1.8 L (1 3/4 qt.)**
Crankcase with oil filter	**1.9 L (2 qt.)**
Fuel	**4.7 L (1.25 Gal)**

Model S1742

Crankcase without oil filter	**1.4 L (1 1/2 qt.)**
Crankcase with oil filter	**1.7 L (1 3/4 qt.)**
Fuel	**4.7 L (1.25 Gal)**

Dimensions (All Models)

Height	**98 cm (38.6 in)**
Length (Overall)	**152.4 cm (60 in)**
Width (Overall): S1642 and S1742	**91 cm (36 in)**
Width (Overall): S2046	**96.5 cm (38 in)**
Weight: S1642 and S1742	**176 kg (388 lb)**
Weight: S2046	**184 kg (406 lb)**

Tires (All Models)

Size (Front)	**15 x 6.50 - 6**
Size (Rear)	**20 x 10.0 - 8**
Size (Rear)	**20 x 8.0 - 8**

Tire Pressure (Front) . . . . . 97 kPa (14 psi)
Tire Pressure (Rear) . . . . . 69 kPa (10 psi)

Mower Deck (42-Inch)

Blades-Rotary 2
Blade Bolt Torque . . . . . 56 N•m (41 lb-ft.)
Cutting Height-Approx. . . . . 25–102 mm (1–4 in.)
Cutting Width . . . . . 1067 mm (42 in.)

Mower Deck (46-Inch)

Blades-Rotary 3
Blade Bolt Torque . . . . . 56 N•m (41 lb-ft.)
Cutting Height-Approx. . . . . 25–102 mm (1–4 in.)
Cutting Width . . . . . 1168 mm (46 in.)

Recommended Lubricants

Engine Oil . . . . . API Service Classification SG or SF
Grease . . . . . SAE Multi-Purpose EP Grease

(Specifications and design subject to change without notice.)

Bag of Parts

Description	Qty
Operator's Manual	1
Safety Video	1
Key	1
Hardware for Battery:	1
• M8x16 Bolts	2
• M8x16 Nuts	2

Check and Connect the Battery

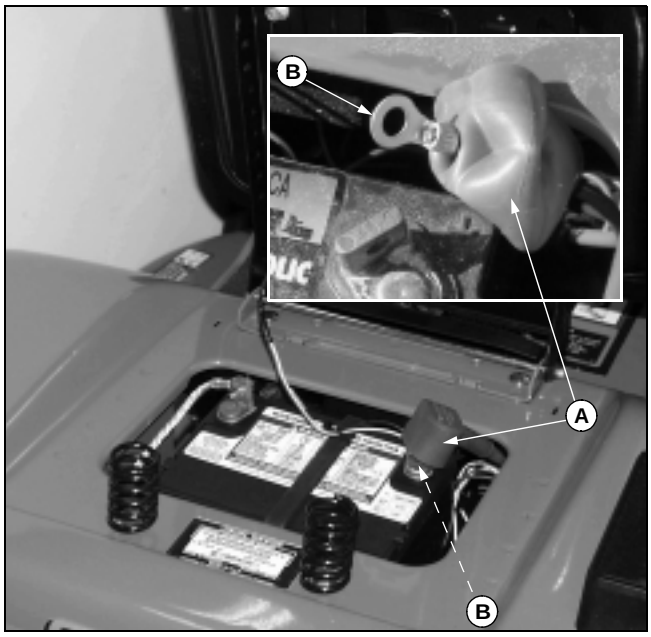
CAUTION: Avoid injury! The battery produces a flammable and explosive gas. The battery may explode:

- **DO NOT smoke near battery.**
- **Wear eye protection and gloves.**
- **DO NOT allow direct metal contact across battery posts.**
- **Remove negative cable first when disconnecting.**
- **Install negative cable last when connecting.**

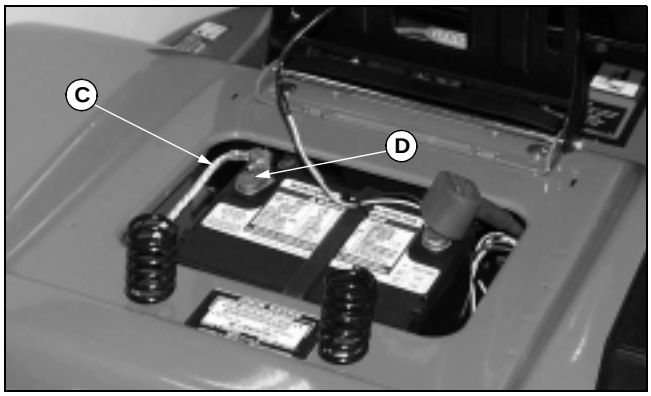
NOTE: The battery was filled with acid and charged when it left the factory. Charge the battery if the mower is not used by the Service Expiration Date indicated on the battery.

Do not attempt to open, add fluid or service battery. Any attempt to do so will void the warranty.

1. Check battery voltage, charge if necessary.
   - Battery should be charged if voltage is below 12.3 volts. Battery is fully charged at 12.6 volts.
2. Remove and discard the RED positive (+) protective cap from the positive (+) battery terminal.



3. Pull back the red terminal cover (A) to allow easy access to the positive (+) cable (B) and connect positive (+) cable to battery.



4. Connect silver braided grounding cable (C) to the negative (–) terminal (D).
5. Apply general purpose grease or silicone spray to terminal to help prevent corrosion.
6. Slide red cover over positive battery cable.

Prepare Mower Deck (42-Inch Only)

CAUTION: Avoid injury! Never operate the mower without the discharge chute guard in place.

- If tractor/mower deck is being set-up for mulching, install mulch cover kit. (See Using Mower Deck Mulch Ready in the Operating Mower section.)

• If tractor/mower deck is being set-up for side discharger or 2-bag bagger DO NOT install mulch cover kit. (See Using Mower Deck Side Discharge OR Using Mower Deck with Optional Equipment in the Operating Mower section.)

Check Tire Pressure

CAUTION: Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:

- **Do not attempt to mount a tire without the proper equipment and experience to perform the job.**
- **Do not inflate the tires above the recommended pressure.**
- **Do not weld or heat a wheel and tire assembly. Heat can cause an increase in air pressure resulting in an explosion. Welding can structurally weaken or deform the wheel.**
- **Do not stand in front or over the tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side.**

1. Check tires for damage.
2. Check tire pressure with an accurate gauge.
3. Add or remove air, if necessary.

WARRANTY

Limited Warranty For New Scotts Brand Products-U.S. Only

Manufactured by John Deere

(U.S. Only)

A. GENERAL PROVISIONS - The warranties described below are provided by John Deere Company (“John Deere”) to the original purchasers of new Scotts Brand Products Manufactured by John Deere. Under these warranties, John Deere will repair or replace, at its option, any covered part which is found to be defective in material or workmanship during the applicable warranty term. Warranty service must be performed by a dealer or service center authorized by John Deere to service the type of product involved, which will use only new or remanufactured parts or components furnished by John Deere. Warranty service will be performed without charge to the purchaser for parts or labor. The purchaser will be responsible, however, for any service call and/or transportation of product to and from the dealer's or service center’s place of business, for any premium charged for overtime labor requested by the purchaser and for any service and/or maintenance not directly related to any defect covered under the warranties below.

B. WHAT IS WARRANTED - All parts of any new Scotts Brand Product Manufactured by John Deere, except batteries, are warranted for the number of months or operating hours specified below. Warranty statements required by law covering engine emission-related parts and components, are found in the Operator’s Manual delivered with the machine.

EQUIPMENT USE	WARRANTY TERM
1) IN RESIDENTIAL (Private Homeowner) APPLICATION	24 Months
2) IN ANY OTHER APPLICATION	90 Days

Each warranty term begins on the date of product sale to the purchaser.

C. WHAT IS NOT WARRANTED - JOHN DEERE IS NOT RESPONSIBLE FOR THE FOLLOWING: (1) Used products; (2) Any product that has been altered or modified in ways not approved by John Deere; (3) Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, lack of proper protection during storage or accident; (4) Normal maintenance parts and service.

D. SECURING WARRANTY SERVICE - To secure warranty service, the purchaser must (1) report the product defect to an authorized dealer and request repair within the applicable warranty term, (2) present evidence of the warranty start date, and (3) make the product available to the dealer or service center within a reasonable period of time.

E. LIMITATION OF IMPLIED WARRANTIES AND OTHER REMEDIES - SCOTTS BRAND PRODUCTS MANUFACTURED BY JOHN DEERE - to the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations, or promises as to the quality, performance or freedom from defect of the Scotts Brand Products Manufactured by John Deere covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE PERIOD OF WARRANTY SET FORTH ON THIS PAGE. THE PURCHASER’S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON THE SCOTTS BRAND PRODUCTS MANUFACTURED BY JOHN DEERE ARE THOSE SET FORTH ON THIS PAGE. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages so the above limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

F. NO DEALER WARRANTY - THE SELLING DEALER MAKES NO WARRANTY OF ITS OWN AND THE DEALER HAS NO AUTHORITY TO MAKE ANY REPRESENTATION OR PROMISE ON BEHALF OF JOHN DEERE, OR TO MODIFY THE TERMS OR LIMITATIONS OF THIS WARRANTY IN ANY WAY.

G. FAILURE DUE TO IMPROPER SET-UP IS NOT COVERED UNDER WARRANTY.

H. If further information is desired, contact a servicing dealer. For the location of servicing dealers in your area call 1-877-356-3698.

Limited Warranty For New Scotts Brand Products

Manufactured by John Deere

(Canada Only)

A. GENERAL PROVISIONS - The warranties described below are provided by John Deere Limited ("John Deere") to the original purchasers of new Scotts Brand Products Manufactured by John Deere. Under these warranties, John Deere will repair or replace, at its option, any part covered under these warranties which is found to be defective in material or workmanship during the applicable warranty term. Warranty service must be performed by a dealer or service center authorized by John Deere to service the type of product involved, which will use only new or remanufactured parts or components furnished by John Deere. Warranty service will be performed without charge to the purchaser for parts or labor. The purchaser will be responsible, however, for any service call and/or transportation of product to and from the dealer's or service center’s place of business, except where prohibited by law, for any premium charged for overtime labor requested by the purchaser and for any service and/or maintenance not directly related to any defect covered under the warranties below.

B. WHAT IS WARRANTED - Subject to paragraph C below, all parts of any new Scotts Brand Product Manufactured by John Deere, except batteries, are warranted for the number of months or days specified below. Warranty statements required by law covering engine emission-related parts and components, if any, are found in the Operator’s Manual delivered with the product.

EQUIPMENT USE	WARRANTY TERM
1) IN RESIDENTIAL (Private Homeowner) APPLICATION	24 Months
2) IN ANY OTHER APPLICATION	90 Days

Each warranty term begins on the date of product sale to the purchaser.

C. WHAT IS NOT WARRANTED - JOHN DEERE IS NOT RESPONSIBLE FOR THE FOLLOWING: (1) Used products; (2) Any product that has been altered or modified in ways not approved by John Deere; (3) Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, lack of proper protection during storage or accident; (4) Normal maintenance parts and service

D. SECURING WARRANTY SERVICE - To secure warranty service, the purchaser must (1) report the product defect to an authorized dealer and request repair or replacement within the applicable warranty term, (2) present evidence of the warranty start date, and (3) make the product available to the dealer or service center within a reasonable period of time.

E. LIMITATION OF IMPLIED WARRANTIES AND OTHER REMEDIES - SCOTTS BRAND PRODUCTS MANUFACTURED BY JOHN DEERE - TO THE EXTENT PERMITTED BY LAW, NEITHER JOHN DEERE NOR ANY COMPANY AFFILIATED WITH IT MAKES ANY WARRANTIES, REPRESENTATIONS, CONDITIONS OR PROMISES RESPECTING THE SCOTTS BRAND PRODUCTS MANUFACTURED BY JOHN DEERE AND COVERED BY THIS WARRANTY OTHER THAN THOSE LISTED ABOVE. THIS EXCLUSION INCLUDES FUNDAMENTAL TERMS, REPRESENTATIONS, CONDITIONS AND WARRANTIES WHICH MAY BE EXPRESSED OR IMPLIED, VERBAL OR OTHERWISE, INCLUDING IMPLIED OR STATUTORY CONDITIONS OR WARRANTIES OF MERCHANTABILITY AND FITNESS, WHETHER PURSUANT TO THE SALE OF GOODS ACT OR ANY OTHER STATUTE OF ANY PROVINCE OR OTHERWISE, EXCEPT WHERE SUCH IMPLIED OR STATUTORY CONDITIONS OR WARRANTIES MAY NOT BE EXCLUDED BY LAW.

F. REMEDIES EXCLUSIVE - THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON THE SCOTTS BRAND PRODUCTS MANUFACTURED BY JOHN DEERE ARE THOSE SET FORTH IN THIS WARRANTY EXCEPT FOR THOSE REMEDIES PROVIDED BY LAW WHICH MAY NOT BE EXCLUDED. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR INJURIES OR BE LIABLE FOR DAMAGES SUFFERED BY THE PURCHASER AS A RESULT OF FUNDAMENTAL BREACHES OF CONTRACT OR BREACHES OF FUNDAMENTAL TERMS. The limitations of liability contained in this warranty shall only be effective to the extent permitted by law. This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction.

G. NO DEALER WARRANTY - EXCEPT FOR WARRANTIES WHICH MAY NOT BE EXCLUDED BY LAW, THE SELLING DEALER MAKES NO WARRANTY OF ITS OWN AND THE SELLING DEALER HAS NO AUTHORITY TO MAKE ANY REPRESENTATION OR PROMISE ON BEHALF OF JOHN DEERE, OR TO MODIFY THE TERMS OR LIMITATIONS OF THIS WARRANTY IN ANY WAY.

H. FAILURE DUE TO IMPROPER SET-UP IS NOT COVERED UNDER WARRANTY.

I. If further information is desired, contact a servicing dealer. For the location of servicing dealers in your area call 1-877-356-3698.

John Deere, Federal and California Emission Control System Warranty (Small Off-Road Gas Engines)

Your Warranty Rights and Obligations

The United States Environmental Protection Agency (EPA), the California Air Resources Board (CARB) and John Deere are pleased to explain the emission control system warranty on your 1995 or later small off-road equipment engine. In California, 1995 and later small off-road equipment engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In other states, 1997 and later model year equipment engines must be designed, built and equipped to meet the U.S. EPA regulations for small non-road, spark ignition engines. John Deere must warrant the emission control system on your small off-road equipment engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road equipment engine.

Your emission control system may include parts such as the carburetor, fuel-injection system and ignition system. Also included may be connectors and other emission related assemblies.

Where a warrantable condition exists, John Deere will repair your small off-road equipment engine at no cost to you including diagnosis, parts and labor.

John Deere Emission Control System Warranty Coverage

In California, 1995 and later small off-road equipment engines are warranted relative to emission control parts for two years. In other states, 1997 and later model year equipment engines are warranted relative to emission control parts for two years. If any emission related part on your engine is defective, the part will be repaired or replaced by John Deere.

Owner's Warranty Responsibilities

As the small off-road equipment engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. John Deere recommends that you retain all receipts covering maintenance on your small off-road equipment engine, but John Deere cannot deny warranty solely for lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road equipment engine owner, you should however be aware that John Deere may deny you warranty coverage if your small off-road equipment engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road equipment engine to an authorized John Deere Commercial and Consumer Equipment Retailer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact your John Deere Commercial and Consumer Equipment Retailer, or the John Deere Customer Communications Center at 1-800-537-8233.

Length Of Warranty Coverage

John Deere warrants to the initial owner and each subsequent purchaser that the small off-road equipment engine is:

- Designed, built and equipped so as to conform with all applicable regulations adopted by the California Air Resources Board (CARB) for 1995 and later equipment engines, and all applicable regulations of the United States Environmental Protection Agency (EPA) for 1997 and later equipment engines; and
- Free from defects in materials and workmanship which can cause the failure of an emission warranted part for a period of two years after the engine is delivered to the initial retail purchaser. John Deere is liable for damages to other engine components caused by the failure of a warranted part during the warranty period. If any emission related part on your engine is defective, the part will be repaired or replaced by John Deere.

Warranted Parts

Coverage under this warranty extends only to the parts listed below (the emission control system parts) to the extent these parts were present on the engine purchased.

Fuel Metering System:

- Carburetor and internal parts (or fuel injection system).
- Air/fuel ratio feedback and control system.
- Cold start enrichment system.

Air Induction System:

- Air Cleaner
- Intake manifold.

Ignition System:

- Spark plugs.
- Magneto or electronic ignition system.
- Spark advance/retard system.

Catalyst System:

- Exhaust manifold.

Miscellaneous Items Used in Above Systems

- Vacuum and temperature switches.
- Electronic controls.
- Hoses, belts, connectors and assemblies.

Since emission related parts may vary slightly from model to model, certain models may not contain all of these parts and certain models may contain functionally equivalent parts.

Warranty Service And Charges

Warranty service shall be provided during customary business hours at any authorized John Deere Commercial and Consumer Equipment Retailer located within the United States of America. Repair or replacement of any warranted part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an authorized John Deere Commercial and Consumer Equipment Retailer. Any parts replaced under this warranty shall become the property of John Deere.

Maintenance Warranty Coverage

a) Any warranted part that is not scheduled for replacement as required maintenance must be warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

b) Any warranted part that is scheduled only for regular inspection to the effect of “repair or replace as necessary” must be warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

c) Any warranted part which is scheduled for replacement as required maintenance must be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any such part repaired or replaced under the warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for that part.

d) Normal maintenance, replacement or repair of emission control devices and systems, which are being done at the customers expense, may be performed by any repair establishment or individual; however, warranty repairs must be performed by an authorized John Deere Commercial and Consumer Equipment Retailer.

e) Any replacement part that is equivalent in performance and durability may be used in the performance of any non-warranty maintenance or repairs, and shall not reduce the warranty obligations of John Deere.

Consequential Warranty Coverage

Warranty coverage shall extend to the failure of any engine components caused by the failure of any warranted part still under warranty.

Limitations

This Emission Control System Warranty shall NOT cover any of the following:

a) Repair or replacement required as a result of (i) misuse or neglect, (ii) improper maintenance or unapproved modifications, (iii) repairs improperly performed or replacements improperly installed, (iv) use of replacement parts or accessories not conforming to John Deere specifications which adversely affect performance and/or durability, (v) alterations or modifications not recommended or approved in writing by John Deere.

b) Replacement parts, other services and adjustments necessary for normal maintenance.

c) Transportation to and from the John Deere Commercial and Consumer Equipment Retailer, or service calls made by the Retailer.

Limited Liability

a) The liability of John Deere under this Emission Control System Warranty is limited solely to the remedying of defects in materials or workmanship. This warranty does not cover inconvenience or loss of use of the small off-road equipment engine or transportation of the engine to or from the John Deere Commercial And Consumer Equipment Retailer. JOHN DEERE SHALL NOT BE LIABLE FOR ANY OTHER EXPENSE, LOSS, OR DAMAGE, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL (EXCEPT AS LISTED ABOVE UNDER “COVERAGE”) OR EXEMPLARY ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE THE SMALL OFF-ROAD EQUIPMENT ENGINE FOR ANY OTHER PURPOSE.

b) NO EXPRESS EMISSION CONTROL SYSTEM WARRANTY IS GIVEN BY JOHN DEERE WITH RESPECT TO THE ENGINE EXCEPT AS SPECIFICALLY SET FORTH IN THIS DOCUMENT. ANY EMISSION CONTROL SYSTEM WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE EMISSION CONTROL SYSTEM WARRANTY TERMS SET FORTH IN THIS DOCUMENT.

c) No dealer is authorized to modify this Federal, California and John Deere Emission Control System Warranty.

Tire Warranty

John Deere warranty applies for tires available through the John Deere parts system. For tires not available through the John Deere parts system, the tire manufacturer’s warranty applicable to your machine may not apply outside the U.S. (See your John Deere dealer for specific information.)

Limited Battery Warranty

NOTE: Applicable in North America only. For complete machine warranty, reference a copy of the John Deere warranty statement. Contact your John Deere dealer to obtain a copy.

TO SECURE WARRANTY SERVICE

The purchaser must request warranty service from a John Deere dealer authorized to sell John Deere batteries, and present the battery to the dealer with the top cover plate codes intact.

FREE REPLACEMENT

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within 90 days of purchase will be replaced free of charge. Installation costs will be covered by warranty if (1) the unserviceable battery was installed by a John Deere factory or dealer, (2) failure occurs within 90 days of purchase, and (3) the replacement battery is installed by a John Deere dealer.

PRO RATA ADJUSTMENT

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship more than 90 days after purchase, but before the expiration of the applicable adjustment period, will be replaced upon payment of the battery’s current list price less a pro rata credit for unused months of service. The applicable adjustment period is determined from the Warranty Code printed at the top of the battery and chart below. Installation costs are not covered by warranty after 90 days from the date of purchase.

THIS WARRANTY DOES NOT COVER

A. Breakage of the container, cover, or terminals.

B. Depreciation or damage caused by lack of reasonable and necessary maintenance or by improper maintenance.

C. Transportation, mailing, or service call charges for warranty service.

LIMITATION OF IMPLIED WARRANTIES AND PURCHASER'S REMEDIES

To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations, or promises as to the quality, performance or freedom from defect of the products covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE ADJUSTMENT PERIOD SET FORTH HERE. THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON JOHN DEERE BATTERIES ARE THOSE SET FORTH HERE. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages. So these limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have some rights which vary from state to state.

NO DEALER WARRANTY

The selling dealer makes no warranty of it's own and the dealer has no authority to make any representation or promise on behalf of John Deere, or to modify the terms or limitations of this warranty in any way.

PRO RATA MONTHS OF ADJUSTMENT

NOTE: If your battery is not labeled with a warranty code, it is a warranty code "B".

Warranty Code	Warranty Period
A	40 Months
B	36 Months
C	24 Months

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NOTES

QUALITY STATEMENT

Please do not return this tractor to the store where you purchased it.

Your Scotts tractor, designed and built by John Deere, is more than just a purchase, it's an investment in quality. That quality goes beyond our equipment to your dealer's parts and service support.

That's why John Deere has initiated a process to handle your questions or problems, should they arise. If you have questions or problems with your new tractor, please follow the steps below. To locate your nearest authorized Scotts servicing dealer, please call toll free 1-877-864-2295.

Step 1

Refer to your operator's manual

A. It has many illustrations and detailed information on the safe and proper operation of your equipment.

B. It gives troubleshooting procedures, and specification information.

C. It gives ordering information for parts catalogs, service and technical manuals.

D. If your questions are not answered in the operator's manual, then go to Step 2.

Step 2

Contact your dealer

A. Your authorized Scotts servicing dealer has the responsibility, authority, and ability to answer questions, resolve problems, and fulfill your parts and service needs.

B. First, discuss your questions or problems with your dealer's trained parts and service staff.

C. If the parts and service people are unable to resolve your problem, see the dealership manager or owner.

D. If your questions or problems are not resolved by the dealer, then go to Step 3.

Step 3

Call the Customer Communications Center

A. Your authorized Scotts servicing dealer is the most efficient source in addressing any concern, but if you are not able to resolve your problem after checking your operator's manual and contacting your dealer, call the Customer Communications Center.

B. For prompt, effective service, please have the following ready before you call:

- The name of the dealer with whom you've been working.
- Your equipment model number.
- Number of hours on machine (if applicable).
- Your 13-digit serial number which you recorded on the inside front cover of this manual.
- If the problem is with an attachment, your attachment identification number.

C. Then call 1-877-864-2295 and our advisor will work with your dealer to investigate your concern.

Record Service Dates

Oil Change	Oil Filter Change	Lubricate Machine	Air Cleaner Element Check/Clean	Fuel Filter Change